



BUILDING OPPORTUNITY

HOW STATES CAN LEVERAGE CAPITAL AND INFRASTRUCTURE INVESTMENTS
TO PUT WORKING FAMILIES ON A PATH TO GOOD JOBS



By David Altstadt

The Working Poor Families Project (WFPF) is a national initiative to strengthen state policies and programs influencing the advancement of low-income working families. The project partners with state-based nonprofit organizations to analyze public policies and programs; identify and advance concrete policy solutions; and better the capabilities of postsecondary education, economic development, and work support systems to serve low-income working families.

To that end, the WFPF is interested in promoting innovative state policies that boost the skills and earning power of low-income working adults. This report highlights how states can utilize their capital and infrastructure investments to increase the skills of low-income working adults and provide pathways for these adults to access construction-related careers that result from public expenditures.

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EXECUTIVE SUMMARY

Each year, billions of taxpayer dollars and government-backed bonds are spent to repair roads, bridges, sewers, and dams; build schools, hospitals, and subsidized housing; spur private development; and, with a boost from the recent federal stimulus, to grow the green, energy-efficient economy. These infrastructure and capital projects employ millions of construction workers. However, getting one of these jobs—or advancing to higher-paid positions in a skilled trade—remains a struggle for workers from low-income families and disadvantaged communities often hit hardest when the economy sours. Now, as the United States seeks to dig out of the current recession through new investments in public buildings and infrastructure, the time is ripe to invest in the human capital of low-income working families and build opportunity for economic prosperity.

State governments have significant—but all-too-often untapped—leverage over publicly funded construction projects. With much of the public infrastructure and capital money running through their governmental agencies, states should exert their authority to expand access to construction careers for low-income working families. To do so, states must: (1) boost the supply of skilled workers by connecting low-income, low-skilled adults to skills development opportunities, and (2) increase employer commitment and demand for hiring these workers and paying them family-sustaining wages. States should pair supply and demand policies to ensure workers who go through skills development programs have access to construction jobs that can support their families.

Several states have taken bold and innovative steps to reduce barriers that low-income, low-skilled adults face in enhancing their education and skills and obtaining good jobs, family-sustaining wages, benefits, and safe work conditions. Other states should follow suit by adopting public policies that:

1. Leverage public investments in capital and infrastructure projects to support skills development.

Inadequate funding is a common obstacle to education and skills development. With state budgets for education, workforce development, and human services running thin, states should look to other resources to prepare low-income, low-skilled adults for construction careers. Public money spent on construction projects offer a potentially robust and flexible source of funds to support skills

development programs. Several states are leading the country in committing resources in highway, infrastructure, and clean energy construction projects to prepare low-skilled, low-income adults for construction jobs.

2. Expand access to apprenticeships for low-income adults and under-represented populations, including women and minorities.

Low-income, low-skilled adults face a number of barriers to entering and successfully completing apprenticeship programs, including limited awareness of apprenticeship opportunities, academic deficiencies that make passing the apprenticeship entrance exam difficult, unreliable child care, and lack of transportation to work sites. Additionally, women and minorities have historically encountered discrimination when applying and interviewing for apprenticeships. States can strengthen apprenticeship opportunities by improving recruitment efforts of under-represented populations and leveraging existing workforce development and education systems to support skills development. In addition, states can invest in supportive services and skills development programs that prepare low-skilled adults to successfully enter apprenticeships.

3. Spur development of innovative, career-path education and skills development at community and technical colleges.

Community and technical colleges provide another skills development route by offering degrees, certificates, and short-term programs for construction

trades. Yet, entry into these college-level education and skills development programs is riddled with barriers for low-income, low-skilled adults lacking the adequate academic preparation and supports to succeed in college. In response, a growing number of states have crafted initiatives and education reforms, under the rubric of career pathways, to build an effective pipeline to and through college-level, job-specific education and skills development programs for low-income, low-skilled adults.

4. Establish hiring preferences on publicly funded projects for low-income, under-represented, and entry-level workers.

Successful completion of an education and skills development program does not alone guarantee that low-income, low-skilled adults will find jobs on construction projects or, if employed, earn enough to support their families. Ultimately, it comes down to whether employers agree to hire them, provide decent wages and benefits, and offer opportunities for career advancement. Too often, however, workers from low-income and disadvantaged communities are either shut out from construction jobs altogether or only offered dead-end, low-paid work. An increasing number of states are seeking to put low-income adults to work on publicly funded construction projects by adopting an apprenticeship utilization requirement, setting a goal or mandate for hiring targeted populations, and implementing a first-source referral system.

5. Strengthen job quality standards to ensure safe working conditions and family-sustaining wages and benefits.

It is not enough just to expand access to jobs on construction projects for previously excluded worker populations, including low-income, low-skilled adults, women, and minorities. States also should make efforts to improve the quality of jobs to ensure workers can provide for their families and have safe working conditions. This includes requiring employers to provide safety training, demonstrate compliance with wage laws and proper classification of employees, pay prevailing wages and benefits, and invest in the skills development and career advancement of workers.

States should pair supply and demand policies to ensure workers who go through skills development programs have access to construction jobs that can support their families.

6 Reform contracting procedures to reward construction firms that invest in the well-being and skills development of their workers.

Increasingly, construction projects are bid out exclusively on the basis of keeping down costs, putting downward pressure on wages and benefits and providing disincentives for contractors to spend resources on skills development. Getting more low-income adults and under-represented workers into well-paying construction careers ultimately requires states to reform contracting procedures in ways that reward construction contractors that invest in the well-being and skills development of their workers. States can support contractors that offer high-quality jobs by adopting pre-qualification requirements, responsible bidder requirements, and project labor agreements.

For states to make the best use of capital and infrastructure investments, it often takes an outside voice to bring attention to the need for skills development and job opportunities for low-income working families. To advance these issues, advocates should embark on a five-step plan to achieve effective policy change:

- 1) Build issue expertise and key relationships.
- 2) Create the climate for change, by educating the public and policymakers about opportunities and shortcomings.
- 3) Identify state leadership that can open the door to policy change.
- 4) Zero-in on specific policy areas to change.
- 5) Monitor policy implementation.

A CALL FOR STATE ACTION

The American Dream is grounded in the belief that hard work leads to economic advancement and self-sufficiency. Today, the stark reality is that too many American families, despite working hard, earn incomes too low to meet their basic needs. More than one in every four working families is now low-income.¹ In all, 42 million men, women, and children are struggling to get by. They are just one family crisis—a medical emergency, a job loss, or a hike in the price of food and fuel—from spiraling deep into poverty, bankruptcy, or even homelessness. Whether these working families fell into hardship as a result of a recent lay-off or have faced hard times for years, many now find themselves stuck in low-wage jobs that often lack health insurance, paid leave, and other employment benefits and provide few opportunities for career advancement (Acs and Loprest 2008).

The current economic downturn has made matters worse for these families. Unemployment has spiked to double digits for adults with a high school education or less and among ethnic and racial minorities, which fill the ranks of low-income working families in disproportionately high numbers (See Appendix, Figures AI and A2). And, if historic trends hold true, lower-income households will lose a greater share of income and take longer to recover their losses than higher-income households (Acs 2008).

Now more than ever, low-income families need help to work their way into the middle class. As private employers continue to shed jobs in the economic downturn, government can provide the needed boost by expanding access to good jobs on publicly funded construction projects. While infrastructure and clean energy investments in the 2009 American Recovery and Reinvestment Act (ARRA) have received considerable attention, the United States spends billions of taxpayer dollars and government-backed bonds each year to repair roads, bridges, sewers, and dams; build public schools, hospitals, and subsidized housing; weatherize and retrofit buildings; and spur private development—creating thousands, if not millions, of jobs.

By spending billions on infrastructure improvements, the government has a vested interest in a construction workforce that is in ample supply, sufficiently trained, and ready to work. A shortage of skilled labor could put publicly funded projects behind schedule, over budget, or diminish the quality of craftsmanship. While the current recession has left experienced tradesmen temporarily out of work,² the construction sector is facing a looming

skills shortage caused by the mass retirement of Baby Boomers and projected long-term growth in jobs.³ Efforts should be taken to help low-wage, low-skilled adults enter the construction sector and to help existing workers advance in their careers. Yet, generally, government doles out construction funding with little regard for whether its infrastructure investments also lead to investments in the human capital of workers and expand access to good jobs for low-income working families.

Barriers to building construction careers

Among disadvantaged workers that fill the ranks of low-income working families, blacks and women have managed to obtain relatively few construction jobs compared to their share of the U.S. labor force; when they do find work on a construction site, they tend to be employed in low-skilled, low-paid occupations. Hispanics have achieved high employment in the construction sector but also are concentrated most heavily in lower-paid, lower-skilled occupations (See Appendix, Table AI and A2).

Low-income working families have faced multiple barriers to joining the construction workforce and advancing to well-paid jobs in the skilled trades. Historically, women and minorities were shut out of jobs due to discriminatory hiring practices. Those hired typically have remained stuck in low-wage, low-skilled jobs, due to a lack of access to education and skills development programs and job networks. While other construction workers have benefited from good wages and benefits won by unions, more recently, the proportion of jobs in the industry with decent pay and health insurance has

shrunk dramatically, corresponding with the decline of unions (Swanstrom 2009).

Therefore, putting low-income working families to work in well-paid jobs on publicly funded construction projects requires government efforts to build their occupational skills, ensure employer commitment for hiring them, and raise the quality of jobs.

Rarely do public construction projects come with funding for education and skills development, while existing workforce development systems—including apprenticeships, community and technical colleges, and one-stop career centers—have come up short in recruiting and preparing low-skilled, low-wage adults for available jobs. Construction firms that win government contracts typically are required to make a good-faith effort to employ women and minorities, but hiring goals are rarely met or enforced rigorously. These contracts seldom come with expectations that a certain percentage of work hours are completed by low-income adults or workers from disadvantaged communities. Certain wage rates may be applied to public projects, but they vary wildly from year to year and from location to location. Rarely are employers required to offer other employment benefits, including health insurance or paid time off that are critical for working families.

In recent years, community advocates have succeeded in getting jobs and skills development opportunities for low-income working families on some infrastructure projects (Mulligan-Hansel 2009) (Rubin and Slater 2005) (Park, Warren, and Waller 2008). While most of

these policy victories pertain only to specific local projects, they have laid the groundwork for systemic policy change. With a grip on the purse strings of many publicly funded construction projects, state governments are in a unique position to bring these efforts to scale, in ways that can open up pathways to construction careers for large numbers of low-income working families across their states. Too often, however, state policies fall short and may even work against these aims.

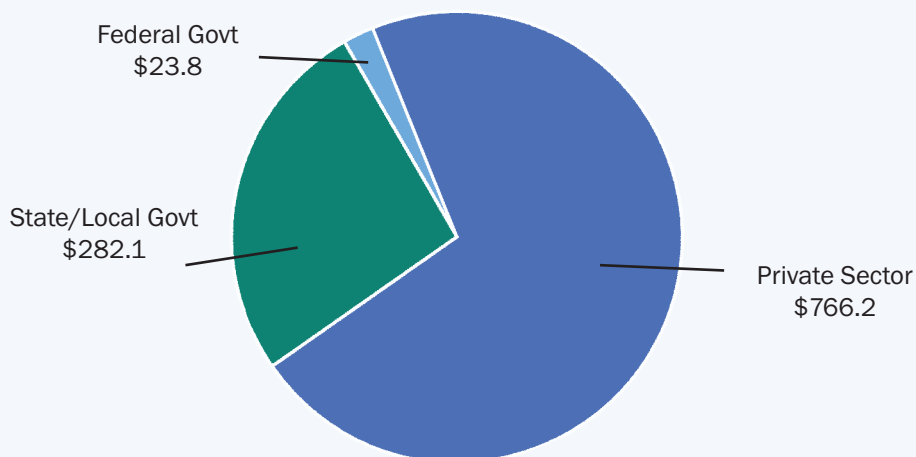
States should strive to leverage public investments in infrastructure in ways that prepare and support low-skilled, low-income adults for construction careers. States have access to sizable resources, through both federal and state funds, which are spent on infrastructure projects. Now is the time to make sure these funds are used wisely and to the benefit of low-income working families.

State role in overseeing public capital and infrastructure projects

Public investment in infrastructure makes up a significant share of the \$1 trillion annual construction market, and is a major contributor of jobs for the 8.7 million workers employed in construction-related occupations in the United States. It is estimated that for every \$1 billion that the government spends on infrastructure projects, 47,500 jobs are created. Federal, state, and local governments chip in just under one-third of all spending on construction—a combined \$306 billion in 2008 (Figure 1). Most public funds go to construction of schools,

Figure 1

PUBLIC AND PRIVATE SPENDING ON CONSTRUCTION (2008 – \$ BILLION)



Source: U.S. Census.

Table 1 PUBLIC CONSTRUCTION SPENDING (2008)

Project Type	Billions
Nonresidential	\$298.6
Educational	\$85.5
Highway and street	\$81.6
Sewage and waste disposal	\$24.6
Transportation	\$24.1
Water supply	\$16.3
Office	\$13.2
Public safety	\$12.3
Power	\$11.5
Amusement and recreation	\$11.2
Health care	\$8.6
Conservation and development	\$5.4
Commercial	\$3.4
Residential	\$7.3
Total	\$305.9

Source: U.S. Census.

highways and streets, sewage and waste disposal, and transportation systems (Table I). In addition, the American Recovery and Reinvestment Act ushered in new public investment opportunities for energy-efficient construction projects and smart energy policies.

With much of the funding running through their governmental agencies, states play a key policy and administrative role over public construction projects. Several federal agencies provide funding to states in the form of formula money, grants, and loans for an assortment of public works projects. State governments also contribute their own funds typically through enactment of state operating, transportation, and capital budget bills. Whether the funds originate at the federal or state levels, state governments often are responsible for overseeing projects. This means ensuring that local entities and construction contractors comply with federal laws and regulations and establishing state-level policies and rules governing use of state dollars. A sample of project types, including funding sources and agencies with oversight authority, is listed in Table 2.

The federal government passes funding onto states primarily for roads, public housing, and public works

projects, including sewage and drinking water systems. Meanwhile, states invest their own resources into a wider array of public works projects and have regulatory oversight over other private construction. Through federal aid and state transportation budget appropriations, state transportation departments award funds and loans to cities and counties to maintain roads and bridges, among other modes of transportation. State capital budgets support construction and rehabilitation of schools, universities, public hospitals, jails, governmental buildings, and other public development projects. With operating budget resources, state economic development agencies make grants, loans, and land giveaways to private businesses to pay construction costs associated with starting up or expanding their operations.⁴ State housing agencies finance construction and renovation of subsidized and affordable housing. Other local public works projects—including construction and repair of dams, solid waste disposal facilities, and water supply, wastewater, and storm water collection systems—also are funded and administered by state agencies. In addition, state entities are charged with oversight of public utilities, casinos, and other regulated private operations, providing states the authority to set policy for the approval of any related construction projects.

State policies for expanding access to construction careers

States should exert their authority over public infrastructure investments to expand economic opportunities and prosperity for low-income working families. To do so, states must: (1) boost the supply of skilled workers by connecting more low-skilled, low-income adults to construction-specific skills development opportunities, and (2) increase employer commitment and demand for hiring these workers for well-paid, career-track jobs on publicly funded projects. Reshaping supply and demand can be accomplished through public policies that invest in skills development, align education systems to the needs of workers and construction companies, ensure employer outreach and hiring of low-income and underrepresented workers, and instill a commitment to good wages and benefits. States should pair supply and demand policies to ensure low-income, low-skilled adults who complete skills development programs have access to construction jobs that can support their families.

In this report, the Working Poor Families Project presents a number of policy and program options for

Table 2

PUBLICLY FUNDED CAPITAL INVESTMENT OPPORTUNITIES

Type of Project	Funding Source	Oversight agency
Construction and/or rehabilitation of public buildings, including K-12 schools, colleges and universities, county hospitals, jails, government offices.	State: <ul style="list-style-type: none"> Capital budget bonds 	Differs by project type <ul style="list-style-type: none"> School facilities commission Higher education Corrections General services
Private development projects that receive state dollars, in form of grants, low-interest loans, tax credits, land giveaway.	State: <ul style="list-style-type: none"> Capital or operating budget; standalone legislation 	<ul style="list-style-type: none"> Economic development agency
Construction or rehabilitation of affordable, subsidized housing for low-income residents; construction or rehabilitation of public buildings to make handicap accessible.	State: <ul style="list-style-type: none"> Capital budget Federal: <ul style="list-style-type: none"> Public and Indian Housing Community development block grant HOME Low Income Housing Tax Credit (LIHTC) Neighborhood stabilization 	<ul style="list-style-type: none"> State housing authority U.S. Dept. of Housing and Urban Development
Installation of weatherization materials and renewable energy systems for dwellings occupied by low-income families	Federal: <ul style="list-style-type: none"> Weatherization Assistance Program 	<ul style="list-style-type: none"> State energy or community development agency U.S. Department of Energy
Energy-efficiency retrofits of residential, commercial, and government buildings; and other purposes.	Federal: <ul style="list-style-type: none"> State Energy Program 	<ul style="list-style-type: none"> State energy agency U.S. Department of Energy
State regulatory authority to approve public utilities construction projects.	State	<ul style="list-style-type: none"> Public utilities commission
Construction and repair of highways, bridges, mass transit, carpool, bicycle and pedestrian.	State: <ul style="list-style-type: none"> Transportation budget (grants and loans to local government) Federal: <ul style="list-style-type: none"> Federal-aid highway program 	<ul style="list-style-type: none"> State transportation agency U.S. Department of Transportation
Construction projects at ports and airports.	State: <ul style="list-style-type: none"> Regulatory or funding authority Bonds 	<ul style="list-style-type: none"> State port or airport authority, or transportation department
Redevelopment of brownfields; construction and rehabilitation of dams, solid waste disposal facilities, and water supply, wastewater, storm water collection systems; parks and recreation facilities.	State: <ul style="list-style-type: none"> Operating or capital budget (grants and loans to local governments) Bonds Federal: <ul style="list-style-type: none"> Clean Water State Revolving Fund Drinking Water State Revolving Fund 	<ul style="list-style-type: none"> Public works agency U.S. Environmental Protection Agency

how states can raise the skills of low-wage adult workers and expand their access to quality construction jobs. Section 2, *Raising Skills, Building Opportunities*, examines public policies that invest in construction-related skills development programs. This section also highlights key education and skills development models, including registered apprenticeship, apprenticeship prep, and career pathways, for which states can and should play a critical policy and funding role. Recognizing that building skills alone cannot guarantee employment, Section 3, *Winning Jobs, Building Opportunities*, identifies several ways states can raise employer interest and commitment for

hiring low-income and under-represented workers for well-paid, career-track jobs. This section examines policies for hiring targets and for setting aside jobs for entry-level or apprentice workers. It also discusses policy options for strengthening job quality standards to assure decent wages and benefits and to help level the playing field for construction contractors that invest in the well-being and skills development of their workers. Finally, Section 4, *Next Steps and Recommendations*, reviews the major findings of the report and provides advocates with several tips on how to engage their state governments in adopting policy improvements.

RAISING SKILLS, BUILDING OPPORTUNITIES

STATE POLICIES THAT BOOST THE SUPPLY OF LOW-SKILLED, LOW-INCOME ADULTS WHO ARE READY TO WORK ON CONSTRUCTION PROJECTS

Education and skills development programs open up doors to well-paying careers in the skilled trades. Without sufficient skills, workers have few options for employment on construction projects aside from low-wage, menial jobs that make supporting a family difficult. Yet, acquiring education and skills for a well-paid trade, such as carpentry, masonry, or electrical work, is often fraught with barriers for low-income, low-skilled adults trying to enter the construction field or advance their careers. Rarely are construction-related skills development programs marketed to them or located near the communities where they live. Even if readily accessible, programs generally do not address the needs of working adults, such as child care, transportation, and tuition assistance. In addition, few programs cater to adults needing assistance with selecting a career path or improving academic and job-readiness skills. When such programs do exist, they typically lack clear ties to the skilled trades or available jobs.

State governments can reduce barriers to education and skills development for low-skilled, low-wage adults by adopting public policies that:

- 1) Leverage public investments in infrastructure to support skills development.
- 2) Expand access to apprenticeship programs.
- 3) Spur development of sector-based career-path education and skills development strategies at community and technical colleges.

Leverage public investments in infrastructure to support skills development

Inadequate funding is a common obstacle to education and skills development. With state budgets for education, workforce development, and human services running thin, states should look to other resources to prepare low-income, low-skilled adults for construction careers. Public money spent on construction projects offer a potentially robust and flexible source of funds to support skills development programs. Several states are leading the country in committing resources from highway, infrastructure, and clean energy construction projects to prepare low-skilled, low-income adults for construction jobs. The time is ripe for other states now to tap construction funds and adopt accountability measures to ensure access to skills development opportunities.

► Federal Highway Projects

The U.S. Department of Transportation (DOT) requires states to offer on-the-job training opportunities on federally funded highway and bridge projects targeted specifically to women and minorities to address their historical under-representation in highway construction skilled crafts. The federal policy, On-the Job Training (OJT), seeks to increase their employment as journey-level workers on public projects and to ensure that a competent workforce is available to meet hiring needs of employers. U.S. DOT also allows states to utilize as much as one-half of one percent of their annual allocation of federal surface transportation and bridge funds to pay for construction-related skills development programs to prepare under-represented populations for available jobs and apprenticeships.⁵

Most states have not taken advantage of the policy and do not invest federal resources in skills development in this way. Four states, Wisconsin, Missouri, Minnesota, and Michigan, have tapped federal resources to prepare low-income individuals, women, and minorities to work as apprentices on highway projects.⁶

The **Wisconsin** DOT has leveraged federal funds tied to major highway construction projects in Madison and Milwaukee, among other areas around the state, to support community-based organizations seeking to recruit and prepare minorities and women for construc-

Several states are leading the country in committing resources from highway, infrastructure, and clean energy construction projects to prepare low-skilled, low-income adults for construction jobs.

tion jobs and apprenticeships.⁷ The state has established a 120-hour “soft” and “hard” skills curriculum to prepare program participants for work, and provides employers a wage incentive to hire them. Drawing on OJT funding, the DOT provides a \$5 hourly wage subsidy for program graduates hired by construction contractors. The wage subsidy is good for two years, but can be increased and extended if the program graduate is enrolled into an apprenticeship program. The state has raised the wage subsidy to \$10 an hour for projects funded through ARRA.

The **Missouri** DOT has committed one-half of one percent of funding in two major construction projects, the \$550 million Interstate 64 project near St. Louis and the \$250 million Interstate 29/35 corridor project near Kansas City, to increase skills development opportunities for low-income individuals, minorities, and women to the tune of \$3.75 million. In **Michigan**, Governor Jennifer Granholm has enacted a statewide policy dedicating federal highway funds the state receives to support a five-week program to prepare low-skilled individuals to work as apprentices.⁸ Meanwhile, **Minnesota** has passed a law authorizing the state DOT to use up to one-half of one percent of funds for skills development programs. After finding that the Minnesota DOT had not spent any of the resources, the state legislature adopted policy language requiring the expenditure of funds and submission of a biannual report documenting

education and skills development outcomes.⁹ Minnesota’s new policy calls for an unprecedented level of accountability and has shed light on the state’s continued struggles in enrolling women and minorities in skills development programs.¹⁰

► State Infrastructure Improvements

Several states have made a commitment to spend their own construction funds on education and skills development. **New Jersey** dedicated one-half of one percent of its \$8.6 billion school construction budget, passed in 2002, to prepare women and minorities to take jobs as apprentices. Skills development programs have been developed in the Abbott School District, the site of many of the construction projects.¹¹ **Connecticut** has invested \$2.7 million in a skills development program to help Hartford residents get construction jobs created through the state’s \$335 million effort to redevelop downtown Hartford. In both states, investments in skills development programs are part of bold, innovative state initiatives to put the urban poor to work on publicly funded construction projects (for more on these efforts see page 27 for Connecticut and page 32 for New Jersey).

Other efforts to set aside state construction funds for education and skills development have yet to succeed. In **Illinois**, advocates sought to set aside one percent of the state’s 2009 capital budget for skills development and employment services. Advocates proposed that the funding go into a state-level workforce development fund that could be used to supplement the state’s Employment Opportunities Grant Program, which prepares women and minorities for jobs in the building trades. Advocates also proposed using the funding to prepare low-skilled, low-income individuals for emerging jobs in green industries and other industries facing critical skills shortages. However, Illinois lawmakers have adopted more targeted strategies for engaging low-income workers, women, and minorities in construction jobs (see page 26).

► State Investments in Clean Energy Economy

States also have provided resources for skills development programs as part of legislation designed to grow a specific sector of the state economy. At least three states, Illinois, Massachusetts, and Washington, have recently committed funds to prepare individuals for the clean energy economy, including such construction-related fields as weatherization of low-income homes, energy-efficient retrofitting of buildings, and installation of green energy sources, such as wind turbines and solar panels.

Through the Evergreen Jobs Act passed in 2009, **Washington** state lawmakers have established a competitive grant program for community and technical colleges to prepare individuals to work in green-collar fields, including clean energy installation and energy-efficient retrofitting, in which the state is investing resources to encourage business growth.¹² The state has set a goal of creating 15,000 green-collar jobs by 2020, with a priority that 30 percent of the jobs be filled by targeted populations, including veterans, National Guard members, and low-income and disadvantaged individuals. The grant program, which is expected to leverage ARRA resources and existing state funds, can be spent on community college curriculum development, transitional jobs, workforce education, program innovations that link basic and remedial education to occupation-specific skills development opportunities, and student outreach efforts in coordination with local workforce investment boards.

As part of a 2009 capital budget bill, **Illinois** lawmakers appropriated \$425 million to weatherize homes in low-income, urban neighborhoods and to pay for skills development programs to prepare residents to do the work.¹³ Organizations can use the funds to improve occupational and basic skills and to offer other workforce development services, including mentoring, job development, support services, transportation assistance, and wage subsidies.

Massachusetts has committed \$2 million to education and skills development, as part of 2008 legislation to grow the clean energy sector.¹⁴ Half of the funds are targeted to programs serving low-income residents of the commonwealth's "gateway communities," which are former mill towns with growing immigrant populations. The money is going to community colleges, workforce investment boards, and community-based organizations that partner with local clean-energy employers to provide low-income residents with skills development and employment services in preparation for jobs in solar panel installation, home weatherization, and energy auditing, among other fields.¹⁵ Massachusetts is spending the other \$1 million to prepare a wider range of workers for green jobs.¹⁶

Expand access to apprenticeships

States have invested public construction dollars in skills development in large part to expand access to apprenticeships. After all, working as an apprentice is a tried-and-true approach to building skills and employment experience in the skilled trades.

However, low-income, low-skilled adults face a number of barriers to entering and successfully completing apprenticeship programs, including limited awareness of apprenticeship opportunities, academic deficiencies that make passing the apprenticeship entrance exam difficult, unreliable child care and lack of transportation to work sites. Additionally, women and minorities have historically encountered discrimination when applying and interviewing for apprenticeships.

States can strengthen apprenticeship opportunities by improving recruitment efforts of under-represented populations and leveraging existing workforce development and education systems to support skills development and career advancement. In addition, states can invest in supportive services and skills development programs that prepare low-skilled adults to successfully enter apprenticeships. Each policy issue is discussed below, after a brief explanation of the apprenticeship model.

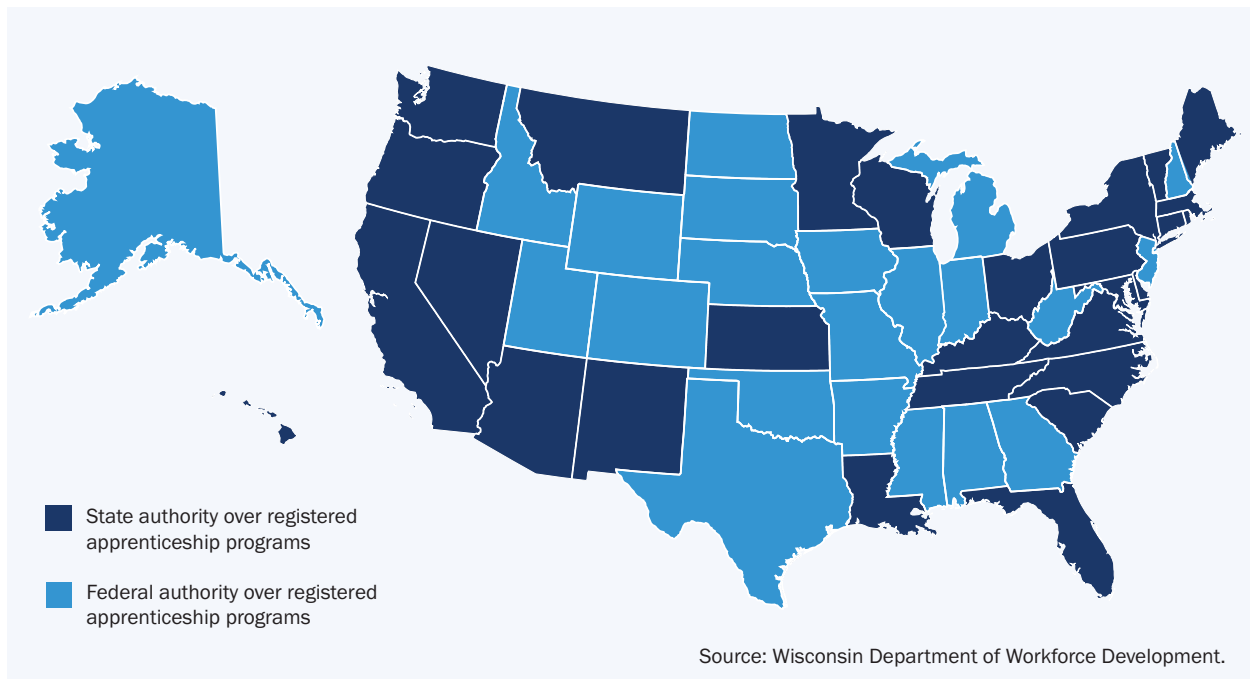
The apprenticeship model

Apprenticeships are unique among education and skills development programs in that they combine classroom instruction, on-the-job learning, and wage-paying work experience. Apprentices are typically employed at the onset of program participation and earn incremental wage increases based on their mastery of manual, mechanical or technical skills and knowledge.¹⁷ Upon successful completion of an apprenticeship, apprentices become journey-level workers. They receive a portable, industry-recognized certificate that may count toward college credit depending on the school and occupation. Most apprenticeships take four years to complete, but the duration differs by occupation and can range from one to six years. In a growing number of apprenticeship programs, apprentices can reduce required hours for work and on-the-job learning by demonstrating certain competencies. Apprenticeship programs vary in their quality of skills development, work opportunities and graduation rates (Bilginsoy 2007).

Apprenticeship programs are neither government-run nor do they typically receive much public funding; instead, programs are developed, operated, and mainly funded by apprenticeship sponsors, which include employers, employer associations, and labor-management organizations. In the case of apprenticeship programs jointly sponsored by unions and contractors, union journey-level workers contribute a small portion of their wages to pay for apprentices' wages and training. Employer-sponsored programs also cover wage costs, but typically require apprentices to pay for their own tuition

Figure 2

STATE ROLE OVER REGISTERED APPRENTICESHIP PROGRAMS



to enroll in required classroom instruction. Some states provide funding to defray tuition costs for apprentices in employer-sponsored programs.

Apprenticeship programs vary in their quality of skills development, work opportunities and graduation rates. Apprentices enrolled in programs that are sponsored jointly by unions and contractors are more likely to complete training and are less likely to drop out than those enrolled in programs sponsored solely by employers (Bilginsoy 2003) (Bilginsoy 2007) (GAO 2005). In addition, most employer-sponsored apprenticeships provide less generous wages and benefits than unions.

Nearly 29,000 sponsors offer apprenticeship programs nationwide, engaging as many as 480,000 apprentices at a given time. More than half of apprentices are in the construction trades (See Appendix, Table A3 for a list of common “apprenticeable” occupations in the construction trades, and length of programs). Increasingly, apprenticeship programs are being developed for the clean energy economy.¹⁸

The government oversees apprenticeship programs and has the ability to enact and strengthen public policies to expand access to apprenticeships. The U.S. Department of Labor (DOL) is responsible for setting

and enforcing program standards on registered apprenticeship programs (other apprenticeship programs operate without government oversight and are not held accountable to the type and quality of services delivered). Oversight duties include awarding certificates to apprentices; providing outreach and technical assistance to encourage the development of new programs; enforcing safety, wage, and equal employment protections for apprentices; and ensuring sponsors deliver high-quality education and skills development.

The role of state governments differs across the nation. Some states have sought authority to oversee registered apprenticeship programs directly, giving them the responsibility to enforce federal standards, as well as establish their own. In other states, U.S. DOL has maintained direct oversight. (Figure 2 provides a breakdown between states with direct oversight, known as State Apprenticeship Agencies (SAAs) and those states in which U.S. DOL has maintained authority as part of the Office of Apprenticeship (OA) system.) The SAA and OA designation affects whether states are involved in enforcing program standards, such as equal employment protections (discussed below). However, all states can and should seek to expand access to apprenticeships,

including investing funds in program development and service enhancements and strengthening coordination and alignment with other workforce development, education, and human service systems.

Strengthening recruitment of under-represented populations

Few minorities and women participate in apprenticeship programs, limiting their exposure to the construction sector and to education and skills needed to advance to well-paid jobs. Women comprise less than three percent of apprentices, while blacks and Hispanics each account for about eight percent of apprentices (Bilginsoy 2007).

Low enrollment in apprenticeship reinforces the low employment of blacks and women across the construction trades. As for the large numbers of Hispanics employed in construction, low enrollment means few obtain extensive, formal education and skills to advance their careers from a low-paid laborer to a journey-worker in a skilled trade. The reasons for low enrollment of minorities and women in apprenticeship programs have varied, ranging from personal preferences for work to exclusionary practices of unions, contractors, and gov-

ernments (Swanstrom 2009) (Bilginsoy 2005) (Berik and Bilginsoy 2005).

Overt acts of discrimination were made illegal in the 1960s and 1970s through the enactment of federal and state regulatory measures. Notably, the federal rule, Equal Employment Opportunity (EEO) in Apprenticeship and Training, 29 CFR-30, requires sponsors of registered apprenticeship programs to develop an affirmative action plan that proposes (1) activities for recruiting women and minorities, and (2) percentage goals and timetables for admitting more women and minorities into the pool of eligible applicants, if current enrollment is deemed deficient (see box).

Depending on the state, federal field staff or state apprenticeship agencies are responsible for conducting periodic reviews of programs, taking actions to bring programs back into compliance with equal employment opportunity requirements, and deregistering noncompliant programs. As a result of the federal rules, minorities and women initially made inroads in apprenticeships and the skilled trades, but gains have leveled off in recent years as enforcement of affirmative action has waned

SPONSOR RESPONSIBILITIES FOR ENSURING EQUAL OPPORTUNITY IN APPRENTICESHIPS

1. Set goals and timetables for engaging more women and minorities if current enrollment does not accurately represent local employment trends, based on the following factors:
 - A. Size of working-age minority and female labor force and total population in program sponsor's labor market area.
 - B. Percentage of minority and female participation as apprentices in a particular craft, as compared to percentage of local labor force.
 - C. Percentage of minorities and females hired as journeypersons by employers participating in apprenticeship program, as compared to percentage of local labor market.
 - D. General availability of minorities and women with present or potential capacity for apprenticeship in the program sponsor's local labor market.
2. Implement outreach strategies for raising enrollment of women and minorities, such as:
 - A. Disseminate program information and application deadlines to schools, community-based organizations, and media that target women and minorities.
 - B. Form ties to employment service agencies to promote job opportunities in apprenticeship system.
 - C. Engage with programs that prepare individuals to become apprentices, and ensure program completers have full and equal opportunity for admission into apprenticeship programs.
 - D. Engage journeypersons to assist with affirmative action activities.
 - E. Grant advance standing or credit on the basis of previously acquired experience, education, skills, or aptitude for all applications equally.
 - F. Develop apprenticeship preparatory and outreach programs if none exist locally.

All states can and should seek to expand access to apprenticeships, including investing funds in program development and service enhancements and strengthening coordination and alignment with other workforce development, education, and human service systems.

(Bilginsoy 2005) (Berik and Bilginsoy 2005) (GAO 2005).¹⁹ State and federal apprenticeship offices have discretion to determine whether sponsors have made “good-faith efforts” to meet goals and timetables. Moreover, sponsors have a major loophole in setting enrollment goals for women: the federal rules permit sponsors to revise goals downward after the first program year to match women’s actual participation rate from the preceding year. Ultimately, this means that if state or federal offices do not hold sponsors accountable initially for enrolling few women, sponsors can proceed in future years by simply matching low enrollment figures.

As a first step to expanding opportunities in the construction trades for low-income working families, states should strengthen enforcement of federal and state EEO rules governing registered apprenticeship programs. This can take the form of:

- 1) Increasing the number of state staff hours spent reviewing programs for compliance with affirmative action requirements.
- 2) Taking a tougher stance in determining whether sponsors have made “good-faith efforts to comply with affirmative action requirements.”
- 3) Establishing incentives, in the form of increased state support, for programs that adhere to female and minority enrollment goals based on DOL’s four-point analysis of labor availability, instead of the apprenticeship participation rate from the preceding year.
- 4) Providing technical assistance to program sponsors on effective outreach and recruitment strategies.
- 5) Facilitating partnerships between program sponsors and women/minority groups and employment service providers seeking to refer individuals to programs.

- 6) Reporting apprenticeship enrollment and demographic figures accurately and fully on an annual basis.²⁰

Leveraging existing education and workforce development systems

States can expand access to apprenticeships further by forging closer ties to community college and one-stop career center systems. Doing so would reduce costs on apprentices’ education and skills development, create clearer paths to well-paid, high-skilled construction careers, open up other funding sources for program development and expansion of apprenticeship slots, and raise awareness of apprenticeships and construction jobs. States can take steps at improving system alignment whether or not they hold direct oversight of registered apprenticeship programs.

► **Community and Technical Colleges**

For years, apprenticeship sponsors have worked successfully with community colleges to award college credit to apprentices for education and skills acquired through apprenticeship programs. This has enabled apprentices to earn an associate’s degree in less time and bypass classes for which they have already mastered the content. However, these credit articulation agreements do not apply to other colleges in which apprentices may wish to enroll and are not binding for other apprenticeship programs.

At least two states, Wisconsin and New Jersey, have taken the bold step of adopting a statewide policy for granting credit at all community and technical colleges for successful completion of a registered apprenticeship in the trades.²¹ **New Jersey** awards at least 25 college credits for accepted programs, while **Wisconsin** awards 39 credits. In both states, the credits earned through an apprenticeship fulfill some or all technical course

requirements, leaving the apprentice to take general studies classes toward an Associate of Applied Science degree in technical studies. Other states should establish similar statewide credit articulation policies to ensure all apprentices have an opportunity to earn an associate's degree in less time and at far less cost.

For low-wage adults interested in apprenticeship, the cost of related classroom instruction can be a significant burden and deterrent to program enrollment. Some states—including **Florida** and **Washington**—provide tuition subsidies to community colleges for students in apprenticeship training (Lerman 2009). **Wisconsin** offers another way to make tuition for apprenticeship classes more affordable. The state requires apprenticeship sponsors to pay wages to apprentices for the 144 hours they are required to spend in related classroom instruction. In effect, the hourly wages defray the cost of tuition and books for apprentices. States that oversee apprenticeship programs can establish a similar policy requiring payment of wages for class time. All states should ensure that related classroom instruction is covered under state-funded financial aid.

► Workforce Investment Act

The Workforce Investment Act (WIA) provides yet another source of funding to pay for apprentices' classroom instruction. However, as with other opportunities to leverage WIA money and services to expand access to apprenticeships, states have been slow to adopt policies that increase coordination between one-stop career centers and apprenticeship programs. Aside from providing tuition subsidies to apprentices, states also can use WIA funds to defray training and wage costs incurred by sponsors in running apprenticeship programs. By leveraging WIA funds in this way, states can spur growth in apprenticeship programs, which is particularly critical in states and for certain apprenticeable occupations in which too few programs and apprentice slots are available.

State also can use WIA funds as incentive money, rewarding sponsors that meet certain state benchmarks, such as adhering to affirmative action enrollment goals based on actual employment trends of women and minorities. In addition, states can draw on WIA funds to support programs that prepare low-skilled adults for apprenticeships. So far, few states have taken advantage of these opportunities.

In an effort to encourage states to do more, the U.S. Department of Labor issued guidance in 2007 to instruct states how to market apprenticeships at one-stop

career centers and use WIA funds and services in support of programs.²² DOL has followed up with a series of regional action clinics to initiate state-level discussion and policy improvements.²³ As described by DOL, states can implement a number of policy recommendations (see Table 3), whether or not they have direct oversight of registered apprenticeship programs. When necessary, states should work with local workforce offices to ensure consistent, statewide implementation.

Supporting “apprenticeship prep” programs

Improving recruitment of under-represented populations and leveraging education and workforce development systems to expand apprenticeship offerings only go so far in getting more low-income, low-skilled adults interested in and ready to work as apprentices. To fill the gap, states can support programs that deliver entry-level education and skills, career counseling, and supportive services in preparation for apprenticeships and construction jobs.

Known as apprenticeship prep or pre-apprenticeship, these programs are well developed and supported in some states for preparing high school youth for apprenticeships and construction careers. A growing number of states have leveraged public infrastructure investments to support programs targeting low-income, low-skilled adults, minorities, and women. As described earlier, Wisconsin, Michigan, and Minnesota have drawn down federal highway money, and New Jersey has tapped school construction funding to launch programs to prepare adults for available jobs and apprenticeships.

In general, apprenticeship prep programs provide basic, introductory information about the construction trades; some form of entry-level education and skills covering job readiness, vocational, and occupation-specific elements; and a range of supportive services. Many programs offer hands-on work experience, stipends, or training wages. A range of nonprofit, public, and private-sector entities operate and fund programs. Nonprofit community- and faith-based organizations are the most common program providers, and federal, state, and local governments are among the most frequent and largest contributors of funding (Conway 2009).

Apprenticeship prep programs have reported reasonably high completion rates, but placement in jobs and registered apprenticeships programs is low. One cause for poor performance is weak or nonexistent partnerships with registered apprenticeship programs and construction employers (Conway 2009).

Table 3

U.S. DOL RECOMMENDATIONS FOR LEVERAGING WIA FUNDS TO SUPPORT APPRENTICESHIP

Policy Idea	Requirements	Advantages
Award Individual Training Accounts to support related classroom instruction.	Awarded per apprentice, subject to eligibility for WIA Adult or Dislocated Worker programs and inability to obtain grant assistance from other sources to pay for education and skills development.	Makes apprenticeships more affordable for low-income and unemployed individuals.
Deliver customized training to support related classroom instruction.	Development of a course of education and skills development for an employer or group of employers, acting as apprenticeship sponsor. Requires sponsor to pay for at least 50 percent of the cost of education and skills development (states can apply for waivers to reduce matching requirement for small to medium sized employers) and to commit to hire or continue to employ trainees. Education and skills development programs developed and delivered by one-stops or partner agencies.	Encourages employers to start up or expand apprenticeship programs; of particular importance in states with low sponsorship of apprenticeship programs and low union density.
Award On-the-Job Training (OJT) funds to subsidize training wages.	Awarded to employers to pay for up to 50 percent of apprentice wages earned during workplace-based education and skills development. States can apply for a waiver to reduce the required match to 25 percent, for small employers. Education and skills development programs developed and delivered by apprenticeship sponsor.	Like customized training, encourages employers to start up or expand apprenticeship programs; of particular importance in states with low sponsorship of apprenticeship programs and low union density.
Use discretionary and incentive funds to support apprenticeship and preparatory programs.	Considerable flexibility exists for the use of governors' statewide 15 percent funds and incentive funds. No requirements for employer match or eligibility criteria for individuals.	Provides a flexible, albeit limited, state-level funding source to support apprenticeship and preparatory programs. States can use the funds for any number of activities, such as to <ul style="list-style-type: none"> • Provide seed money for the development of new programs • Award incentive money for apprenticeship sponsors that expand apprentice slots • Cover tuition costs for related classroom instruction, subsidize apprentice wages • Spur on other program innovations
Promote apprenticeship through one-stop career center system.	No federal requirement exists for disseminating apprenticeship information through one-stop career center system.	Suggested one-stop activities include: <ul style="list-style-type: none"> • Routinely integrate information about apprenticeship and preparatory programs into career guidance and career exploration services • Integrate apprenticeship electronic database with the state job matching system • Co-locate apprenticeship staff at one-stops to strengthen partnerships with case managers and to promote programs to clients and employers • Co-sponsor career fairs with apprenticeship staff • Coordinate development of apprenticeship prep programs between apprenticeship sponsors and community-based organizations.

Source: U.S. Department of Labor, Employment and Training Administration. Author summary.

State governments can instigate stronger connections by requiring that registered apprenticeship programs establish formal partnerships with apprenticeship prep programs (or start up their own prep programs if none exist locally, as mandated by the federal Equal Employment Opportunity in Apprenticeship and Training rule). Leading the way, the building trades council of the AFL-CIO has established a multi-craft pre-apprenticeship program, including a core curriculum and nationally recognized industry credential, which for the first time provides a standardized entry into any of the crafts in the building trades.

In addition, states should require construction employers that win public construction contracts to engage with apprenticeship prep programs and interview program completers for entry-level job openings. By doing so, states can ensure that apprenticeship prep providers gain access to invaluable input in crafting program curriculum that meets industry needs, potential sources of funding and in-kind support to improve quality of services, and a strong professional network to ensure participants have access to hands-on work experience and are better positioned to compete for available apprenticeships and jobs.

States should follow up the mandates with technical and financial assistance. States can facilitate meetings amongst parties and ensure apprenticeship prep programs are widely available. To expand availability, states should increase their funding for apprenticeship prep programs, both in seeding the development of new programs in under-served areas and construction trades and in enhancing the services of existing programs. Funding should come with requirements to track participants' employment and earnings and measuring performance outcomes.

States can further raise the quality of apprenticeship prep programs by establishing guidelines for receiving state funds and by offering technical assistance in implementing best-practice program strategies for serving adults and engaging registered apprenticeship programs and construction employers. Doing so would bring a level of consistency and quality to apprenticeship prep programs across the state.

State guidelines for apprenticeship prep programs are not without precedent. At least two states, **Maine** and **Connecticut**, have enacted regulations for certifying prep programs that serve high school youth. Maine apprenticeship officials are interested in expanding the state

rules to programs that serve low-skilled adults, as well.²⁴ Other states have established criteria for awarding funds to apprenticeship prep programs. **Illinois** has established the Economic Opportunities Grant Program to support nonprofit organizations and educational institutions that offer skills development activities and supportive services to prepare minorities, women, and hard-to-employ individuals for construction trades.²⁵ **Ohio** has used ARRA funds to launch its Constructing Futures initiative, designed to prepare unemployed adults for construction careers.²⁶ Table 4 presents a side-by-side comparison of apprenticeship prep guidance established by Maine and Ohio.

Spur development of innovative, career-path education and skills development

Apprenticeship is not the only way to obtain education and skills for construction careers; after all, only about half of journey-level construction workers go through a registered apprenticeship program (Glover and Bilginsoy 2005). Community and technical colleges provide another skills development route by offering degrees, certificates, and short-term programs for carpentry and welding, among other fields. In addition, colleges are ramping up their course offerings to prepare students for home weatherization and energy-efficiency construction jobs expected to be created through new federal and state investments in the clean energy economy. **Maryland** is leading the way by setting up home energy analysis courses at several community colleges.²⁷

Yet, entry into these college-level education and skills development programs is riddled with barriers for low-income adults lacking the adequate academic preparation and supports to succeed in college (Garber and Altstadt 2008). In response, a growing number of states have crafted initiatives and education reforms, under the rubric of career pathways, to build an effective pipeline to and through college-level, job-specific education and skills development programs for low-skilled students.

Defined as a framework, career pathways are “a series of connected education and training programs and support services that enable individuals to secure employment with a specific industry or occupational sector, and to advance over time to successively higher levels of education and employment in that sector” (Jenkins 2006). Career pathway initiatives blend multiple elements that range from redesigning curricula and programs that lead to an industry-recognized credential to aligning the various missions of a community college

and providing case management and wrap-around support services (Stephens 2009).

Three states, **Washington, Kentucky, and Wisconsin**, are leading the country in crafting state-level career pathway initiatives that target such construction trades as carpentry, HVAC installation and service, and welding (a critical skill for pipe fitters, sheet metal workers, and structural steel/ironworkers). To build career pathways

in construction, the states have implemented several educational innovations and reforms that expand college access to low-skilled, low-wage adults (see Table 5 for a state breakdown for career pathway innovations). It is time for other states to replicate these best-practice strategies to engage low-income, low-skilled adults in postsecondary education and skills development programs in preparation for construction careers.

Table 4

GUIDELINES FOR APPRENTICESHIP PREP

	Maine	Ohio
Technical or theoretical classroom instruction	Yes. Not to exceed 750 hours in two-year program.	Yes. Occupational education and skills development in settings such as the classroom or lab.
Remedial instruction in job readiness and literacy		Not a core requirement; Available for participants in need of services.
On-the-job training	Yes. Not less than 250 hours in two-year programs.	Not a core requirement; Available for participants in need of services.
(Paid) work experience	Yes. Entry wage not less than the minimum wage.	Not a core requirement; Available for participants in need of services. No mention of wage requirements.
Placement into registered apprenticeship	Yes. Requires a "letter of intent to hire" upon successful completion of program.	Not required, however, program performance is based primarily on enrollment and retention of trainees in registered apprenticeship programs.
Placement into jobs		Not required, however, program performance is based primarily on placement in permanent jobs with family-sustaining wages of \$30,000 or more per year plus benefits.
Enrollment in further education and skills development		Not required, however, program performance is based on enrollment in further education and skills development geared to career goals identified by trainees while participating in the program.
Mandated partners	Yes. Vocational school registered apprenticeship sponsor, and employer	Yes. Registered apprenticeship sponsor, workforce investment board, postsecondary education and skills development provider, adult basic education, nonprofit community-based organization.
Occupational safety and health protections	Yes. Employers must comply with federal OSHA regulations.	
Equal employment opportunity	Yes. Recruitment, selection, employment, and education and skills development shall be done without discrimination of race, sex, age, religion, color, ancestry, physical handicap, marital status, or arrest and court record.	
Supportive services		Yes. Pre-assessment, individual service plans, career counseling, need-based stipends for equipment, tools, and economic need.

Source: Maine Department of Labor and Ohio Department of Job and Family Services. Author summary.

Table 5

EXAMPLES OF STATE CAREER PATHWAY INITIATIVES

	Pathway Initiative	Description	State Policies	Community College Program Examples
Washington	Integrated Basic Education and Skills Training (I-BEST)	College-level occupational certificate program that leads to an associate degree, blending contextualized adult basic education (ABE) and career-technical coursework and co-taught by ABE and college instructors. Geared to adults enrolled in ABE and English as a Second Language (ESL) programs. ²⁸	<ul style="list-style-type: none"> Enhanced per-pupil funding for approved programs 	<ul style="list-style-type: none"> Carpentry: Grays Harbor Construction Industry Training: Edmonds Drafting: Clover Park HVAC: Seattle North Welding: Bellingham, Big Bend, Clark, Everett, Grays Harbor, Green River, Olympic, Peninsula, Skagit Valley, Spokane²⁹
	Opportunity Grants	Financial aid targeted to low-income adults to cover tuition and mandatory fees for courses up to 45 credits, and up to \$1,000 for books/supplies per academic year. Includes access to individualized student support services: a single point of contact, one-on-one tutoring, career advising, college success classes, emergency child care, and emergency transportation. ³⁰	<ul style="list-style-type: none"> State-appropriated funds for use in approved programs 	<ul style="list-style-type: none"> Carpentry: Grays Harbor Construction: Bellingham, Clover Park, Edmonds, Peninsula, Pierce Puyallup, Renton, Seattle Central HVAC: North Seattle, Wenatchee Valley Welding: Bates, Bellingham, Big Bend, Centralia, Clark, Grays Harbor, Green River, Lower Columbia, Olympic, Peninsula, Renton, Skagit Valley, South Puget Sound, Spokane, Wenatchee Valley³¹
	Student Achievement Initiative	Performance funding system, which rewards community and technical colleges for increasing the levels of achievement attained by their students; represents a shift from allocating funds based on enrollment. Performance indicators include: <ul style="list-style-type: none"> Building towards college level skills, i.e. basic skills gains, passing precollege writing or math First year retention, i.e. earning 15 then 30 college level credits Completing college-level math, i.e. passing math courses required for either technical or academic associate degrees Completions, i.e. degrees, certificates, apprenticeship.³² 	<ul style="list-style-type: none"> First-year seed money for student success strategies Incentive funding for achieving goals 	Affects all programs
Kentucky	Remedial Bridge	Pilot projects that connect ABE or remedial education to college-level career-technical coursework. A team (representing developmental education, adult education, general education, and career-technical education) designs projects, which may include: <ul style="list-style-type: none"> Contextualized curriculum. Flexible course/content delivery through using multiple sites, online and web-enhanced delivery, self-directed pacing, problem-based learning, and modularized courses. Coursework broken into manageable portions delivered at the same time or separately. Open-entry/open-exit. Creative methods to integrate basic academic and occupational skills, such as service learning, workplace learning, problem-based, simulations, authentic assessments.³³ 	<ul style="list-style-type: none"> State recognition of shorter, technical certificates, consisting of two to six courses (16 credits) leading to an associate degree 	<ul style="list-style-type: none"> HVAC: Jefferson

	Pathway Initiative	Description	State Policies	Community College Program Examples
Wisconsin	Regional Industry Skills Education (RISE)	A joint initiative of the Wisconsin Technical College System and the Wisconsin Department of Workforce Development to make career pathways a central part of Wisconsin's education and job training systems. Involves reorganization of postsecondary programs into a sequence of modules that lead to a degree or technical diploma. Includes bridge instructional program linking ABE and ESL instruction with preparation for postsecondary education and occupational skill attainment. Builds partnerships between employers, workforce development agencies, educational institutions, and other community organizations to provide education and skills development resources and support services. ³⁴	<ul style="list-style-type: none"> WIA Local Plan Guidelines include, for the first time, a requirement that RISE career pathways principles be incorporated into training programs. WIA Eligible Training Provider List (ETPL) revised to include apprenticeships, bridges, and chunked career pathways training in targeted RISE occupations. WIA 35% rule now includes funding of career pathway bridges as a training cost. \$3 million Sector Strategies Initiative for both industry engagement and worker training to support employer demand for skilled workers. 	<ul style="list-style-type: none"> Targeted sectors to include construction. Welding bridge programs in operation or under development at Chippewa Valley, Northcentral, Northeast WI, Moraine Park, Milwaukee, Lakeshore, Waukesha, and Gateway technical colleges.
	Opportunity Grants	Available through local workforce investment boards for individuals who are not eligible for other financial aid. Grants of up to \$1,000 may be used for tuition or wrap-around services, specifically for occupational skills development that leads to high-demand occupations.	<ul style="list-style-type: none"> \$1.5 million in Opportunity Grants were funded by WIA discretionary funds. 	<ul style="list-style-type: none"> Targeted to high-demand occupations, including construction-related fields.
	Skills Jump Start Grants	Support the development of "bridge" programs that connect ABE or English instruction for non-native speakers concurrently with occupational skill training. Targeted to low-skilled adults who could benefit from additional education but are not prepared to return to school full-time.	<ul style="list-style-type: none"> \$300,000 in WIA discretionary funds 	<ul style="list-style-type: none"> Targeted to high-demand occupations, including construction-related fields.

Sources: Washington State Board of Community and Technical Colleges, Kentucky Community and Technical College System, and Center on Wisconsin Strategy.

EDUCATION AND SKILLS DEVELOPMENT

POLICY RECOMMENDATIONS

To expand access to construction-related careers, states must find ways to increase the supply of low-skilled, low-income adults with occupational skills. Several states have taken bold and innovative steps to reduce barriers that adults face in enhancing their education and skills. It is time for other states to follow suit, by tapping construction resources to fund skills development programs, strengthening apprenticeship opportunities, and building career pathways through community and technical colleges—as described below.

1. Leverage public investments in infrastructure to support skills development.

- ▶ Set aside a portion of funding for construction projects to pay for education and skills development, including the following sources:
 - Federal highway funds (up to one-half of one percent of funds, as permitted by federal law).
 - State infrastructure improvements.
 - State investments in clean energy economy.

2. Expand access to apprenticeships for low-income adults and under-represented populations, including women and minorities.

- ▶ Strengthen recruitment of under-represented populations by improving enforcement of federal and state equal employment opportunity laws with jurisdiction over registered apprenticeship programs.
 - Increase the number of state staff hours spent reviewing programs for compliance with affirmative action requirements.
 - Take a tougher stance in determining whether sponsors have made “good-faith efforts” to comply with affirmative action requirements.
 - Establish incentives, in the form of increased state support, for programs that adhere to female and minority enrollment goals based on DOL’s four-point analysis of labor availability, instead of the apprenticeship participation rate from the preceding year.
 - Set higher goals by trade and regional labor market for the percentage of minority and female applicants to be admitted into programs.

- Provide technical assistance to program sponsors on effective outreach and recruitment strategies.
- Facilitate partnerships between program sponsors and women/minority groups and employment service providers.
- Report apprenticeship enrollment and demographic figures accurately and fully on an annual basis.
- ▶ Leverage existing workforce development and education systems to expand apprenticeship offerings.
 - Establish a statewide credit articulation policy for awarding college credit for apprenticeships at state-funded colleges and universities.
 - Reduce the cost of related classroom instruction for apprentices by requiring apprenticeship sponsors pay wages for hours spent in class, and ensuring eligibility for state-funded financial aid.
 - Require one-stop career center system to take steps to promote apprenticeship and apprenticeship prep programs and use Workforce Investment Act funds to:
 - Cover apprentices’ tuition costs.
 - Provide aid to apprenticeship sponsors seeking to develop new apprenticeship programs or expand enrollment in current offerings.
 - Supplement apprentices’ wages.
 - Support the formation of apprenticeship prep programs.

- ▶ Support a statewide network of “apprenticeship prep” programs that link directly to apprenticeship programs and jobs.
 - Forge ties to apprenticeships and jobs, by
 - Requiring registered apprenticeship programs to establish formal partnerships with apprenticeship prep programs (or start up their own prep programs if none exist locally, as mandated by the federal Equal Employment Opportunity in Apprenticeship and Training rule).
 - Requiring construction employers that win public construction contracts to engage with apprenticeship prep programs and interview participants for entry-level job openings.
 - Invest state resources in program development and service enhancements.
 - Establish state-level guidelines for receiving state funds and provide technical assistance in implementing best practice program strategies for engaging low-income, low-skilled adults.

3. Spur development of innovative, career-path education and skills development at community and technical colleges.

- ▶ Implement state-level educational innovations and reforms that expand access of low-skilled, low-income adults to college-level education and skills development in the construction trades, including:
 - Split degrees into a sequence of industry-recognized certificates that can stand alone or ladder into existing degree or diploma programs.
 - Integrate basic or remedial education into career-technical education and skills development programs.
 - Target financial aid resources to help low-income students obtain a sub-associate’s degree-level credential.
 - Develop performance-based funding that rewards community colleges for the gains students make in improving their basic skills.
 - Enhance support services and career counseling.
 - Offer nontraditional and flexible delivery of coursework.
 - Build work experience into academic programs.

Without sufficient skills, workers have few options for employment on construction projects aside from low-wage, menial jobs that make supporting a family difficult.

WINNING JOBS, BUILDING OPPORTUNITIES

STATE POLICIES THAT INCREASE EMPLOYER COMMITMENT AND DEMAND TO HIRE LOW-INCOME, LOW-SKILLED ADULTS FOR CONSTRUCTION JOBS THAT PROVIDE FAMILY-SUSTAINING WAGES AND BENEFITS

Successful completion of an education and skills development program does not alone guarantee that low-income, low-skilled adults will find jobs on construction projects or, if employed, earn enough to support their families. Ultimately, it comes down to whether employers agree to hire them, provide decent wages and benefits, and offer opportunities for career advancement. Too often, however, workers from low-income and disadvantaged communities are either shut out from construction jobs altogether or only offered dead-end, low-paid work. Meanwhile, increasingly, construction projects are bid out exclusively on the basis of keeping down costs, putting downward pressure on wages and benefits and providing disincentives for contractors to invest in education and skills development programs. States should work to balance these two goals.

States can exert their authority over publicly funded construction projects to improve work conditions and wages and to encourage employers to hire low-income adults. Just as state efforts in education and skills development can increase the supply of adults ready to work on construction projects, states can implement public policies that raise employer demand for hiring them for good jobs. Doing so would generate greater impact for every taxpayer dollar spent on construction, by ensuring that improvements in infrastructure expand economic opportunities and prosperity for working families, raise their taxable income, and mitigate their need for public assistance. To achieve this, states should adopt policies that:

- 1) Establish hiring preferences on publicly funded projects for low-income, under-represented, and entry-level workers.
- 2) Strengthen job quality standards to ensure family-sustaining wages and benefits are provided.
- 3) Reform contracting procedures to reward construction firms that invest in the well-being and skills development of their workers.

Establish hiring preferences

An increasing number of states are seeking to put low-income adults to work on publicly funded construction projects by holding employers to preferential hiring policies. Other states can follow suit by adopting an

apprenticeship utilization requirement, setting a goal or mandate for hiring targeted populations, and implementing a first-source referral system.

► Apprenticeship Utilization Requirement

One way to improve the employment prospects of low-income workers who are new to the trades is by making more entry-level jobs available. States can ensure ample job opportunities by establishing an apprenticeship utilization requirement (AUR), which stipulates that contractors hire apprentices to perform a certain percentage of labor hours on a given publicly funded project. By putting more apprentices on the job, states demonstrate a commitment to education and skills development, while creating demand for apprenticeship programs. Doing so may open up more apprentice slots for apprenticeship prep graduates seeking advanced education and skills.

AURs do not increase the overall number of jobs on a construction project; rather, they steer a greater share of jobs—or work hours—to apprentices and fewer to journey-level workers.³⁵ AURs typically raise apprentice utilization to 15-20 percent of work hours on a given project (Rubin and Slater 2005). Apprentice-to-journey ratios are regulated by states and/or the U.S. Department of Labor, so changes to the ratio, in the form of adopting an AUR, can sometimes require getting a waiver, the feasibility of which varies from state to state (Rubin and Slater 2005).

Several states have adopted AURs for state-funded construction projects through statute or executive order; other states have established voluntary incentives for contractors that use apprentices or broad requirements that contractors participate in apprenticeship programs (see Table 6). States should adopt or strengthen AURs to expand access to entry-level, career-path jobs. However, states should recognize that AURs are a blunt tool for raising employer demand for low-income adults because they may or may not be among apprentices hired onto projects.

In addition, there is evidence that some construction firms have abused AUR policies to keep down wages. Employers have been known to set up low-quality, informal apprenticeship programs in order to claim that they employ apprentices, whom they then pay low wages. To combat potential abuse, states should require that employers participate in registered apprenticeship programs in order to comply with AUR policies.

► Targeted Hiring

States can opt for a more targeted approach to affect hiring decisions on publicly funded construction projects,

by requiring or encouraging contractors to give hiring priority to specific worker populations, such as residents nearby project sites, low-income individuals, minorities, or women. Like AURs, targeted hiring provisions typically designate a certain percentage of jobs or work hours on a project to the targeted population.

Targeted hiring provisions have been adopted most often by local governments for locally funded projects (Mulligan-Hansel 2008). Perhaps the best known example involved a \$2.4 billion rapid rail construction project in Los Angeles, known as the Alameda Corridor Project, in which 30 percent of all construction and non-construction work hours were promised to low-income residents who lived along the 21-mile planned corridor. The project also guaranteed 1,000 training slots: 650 for apprenticeship prep participants to graduate and enroll in union apprenticeship programs and 350 for non-trades jobs. In addition, community organizations developed a program to aid in recruitment and job readiness of new hires (Rubin and Slater 2005). Then-Senator Barack Obama cited the Alameda Corridor's targeted hiring provisions in a Sense of the Congress resolution

Table 6

STATE APPRENTICESHIP UTILIZATION POLICIES

State	Apprenticeship Utilization	Policy Source
California	<ul style="list-style-type: none"> 1 hour for every five hours of labor performed by a journey worker on public works projects. 	Statute: www.dir.ca.gov/t8/230_1.html
Illinois	<ul style="list-style-type: none"> Requires participation in registered apprenticeship programs for contractors and their subcontractors on state building and facility construction projects. 	Statute: http://ilga.gov/legislation/publicacts/fulltext.asp?Name=093-0642
New York	<ul style="list-style-type: none"> Permits local governments to adopt AURs for building projects. 	Statute: www.labor.state.ny.us/formsdocs/app/nysclarticle23.pdf
Washington	<ul style="list-style-type: none"> 15% of work hours on public works projects. 	Statute: www.lni.wa.gov/TradesLicensing/Rules/files/apprenticeship/ApprenticeshipUtilizationBillpassed2005.pdf
Wisconsin	<ul style="list-style-type: none"> 10% of work hours on projects awarded by Dept. of Administration. 5% of work hours on projects awarded by Dept. of Transportation. <p>or</p> <ul style="list-style-type: none"> Maximum ratio set by trade. 	Executive Order: http://dwd.wisconsin.gov/apprenticeship/executive_order108.htm
Wyoming	<ul style="list-style-type: none"> Offers a voluntary incentive to contractors: 10% of work hours on public works projects in exchange for considering bid price as if 1% lower. 	Statute: http://legisweb.state.wy.us/2005/enroll/hb0253.pdf

Source: FRESO.

encouraging the use of employment and skills development programs for economically disadvantaged individuals on federally funded transportation projects.³⁶

In recent years, a few states have taken bold steps to attach targeted hiring provisions to specific projects, including Connecticut, Illinois, and Missouri (see Table 7). Other states should follow suit. It is important that states tie hiring policies to efforts that provide skills development and placement services.

Connecticut has made a commitment to employ Hartford residents on state-funded redevelopment projects in downtown Hartford. The local hire policy, coupled with state investments in a skills development program (see page II), provides an innovative approach to address the needs of the urban poor (see box).

Illinois has set goals for the proportion of apprentice hours on state- and federally-funded construction projects to be performed by minorities and women. The measure, adopted as part of the state's 2009 capital budget bill, puts the goals at 20 percent for minorities and 10 percent for women on projects greater than \$5 million near or in urban areas of the state.

Other states have long established equal employment opportunity policies, which require construction contractors on public projects to actively recruit women and minorities. In addition, some states, as well as the federal government, have set race- and gender-based

hiring goals, differentiated by trade and/or jurisdiction.³⁷ Illinois' policy is unique in that it seeks to increase the number of women and minorities specifically in apprenticeships, affirming a commitment to high-quality skills development programs and bringing new workers into the trades; whereas, the other state policies may only ensure that experienced minority and female journey workers get jobs on projects.

Missouri has sought to target hiring on federally funded projects for the construction of roads and subsidized housing, paying the way for other states to take similar actions. Starting in 2006, Missouri Department of Transportation (DOT) has held highway contractors to a goal of hiring low-income individuals, women, and minorities to perform 20-30 percent of work hours on federally funded road construction projects on Interstate 64 near St. Louis and Interstate 29/35 corridor near Kansas City. The DOT also dedicated one-half of one percent of project funds to pay for skills development activities, as was previously mentioned. In addition, the St. Louis project offers incentives to contractors that achieve hiring goals. Missouri has agreed to consider expanding the hiring goals to road projects across the state if the St. Louis pilot proves successful in diversifying the workforce; women and minorities are reportedly performing 27 percent of work hours (Schuler and Baron 2009).

Table 7 STATE TARGETED HIRING POLICIES				
State	Project Type	Targeted Population	Hiring Goal	Policy Source
Connecticut	State-funded Hartford redevelopment projects	Hartford residents	30% of jobs	Statute (see Sec.32-602.Purpose Powers. (8)(A)(C): www.cga.ct.gov/2009/pub/chap588x.htm Development agreements
Illinois	Federal and state-funded road, building, and other public works projects in select cities and counties	Minorities	20% of apprentice hours	Statute (see Article 35): www.ilga.gov/legislation/96/HB/PDF/09600HB2424sam001.pdf
		Women	10% of apprentice hours	
Missouri	Federally funded highway projects in St. Louis and Kansas City	Women, minorities, and low-income individuals engaged in On-the-Job Training activities	20% of work hours	Community Benefits Agreement: www.thenewi64.org/download/2006-05-12%20Workforce%20Utilization%20Plan%20Partnering%20Agreement%20Signatures.pdf
Missouri	Federally funded subsidized housing projects	Public housing residents and local low-income individuals	30% of new hires	Agency actions: www.mhdc.com/rental_production/section3
		Low-income subcontractors	10% of project funds	

Sources: Connecticut General Assembly, Capital City Economic Development Authority, Illinois General Assembly, Missouri Department of Transportation, Missouri Housing Development Commission.

CONNECTICUT'S EFFORTS TO INVEST IN HARTFORD AND THE LOCAL WORKFORCE

Since 1999, Connecticut has poured \$335 million worth of bonds into a series of major development projects in downtown Hartford to revitalize the local economy (CCEDA 2009). Connecticut took the opportunity to invest in the local workforce, providing a model for other states. The state established a goal that 30 percent of construction and non-construction jobs go to Hartford residents. To ensure a job-ready and skilled workforce, the state has committed \$2.7 million to help launch a skills development program, which is charged with recruiting and preparing city residents for available jobs. To date, employers have hired more than 2,000 Hartford residents participating in the program; and, among four of the major development projects, residents have filled an average of 29 percent of jobs (CCEDA 2009).

Community advocates succeeded in getting the state to establish the local hiring goal and to launch the skills development program, called the Hartford Job Funnel (Rubin and Slater 2005) (Redstone Research 2009). The state law authorizing the redevelopment initiative mandates that private developers and contractors make "reasonable efforts" to hire qualified city residents.³⁸ Development agreements signed for each project carry the 30 percent hiring goal and require private developers and their contractors to make a commitment to give qualified residents participating in the Hartford Job Funnel first consideration for available jobs.³⁹ The development agreements,

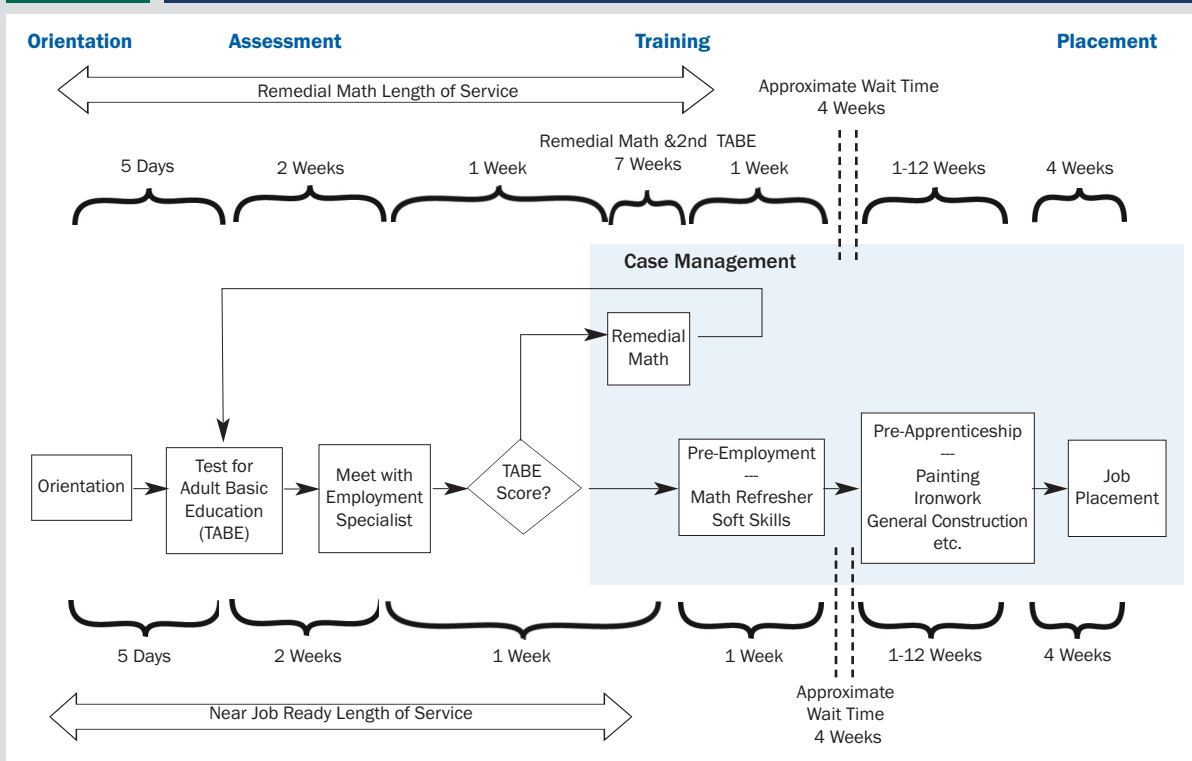
however, do not put the onus on developers and contractors to meet the 30 percent hiring goal; rather, the state places the responsibility on the Hartford Job Funnel to make qualified applicants available to employers at times that they are hiring.

The Hartford Job Funnel is managed by an 18-member steering committee, with administrative and staff support from the local workforce investment board and community-based organizations. The Funnel program takes city residents through a series of steps to gauge their interest and ability to work in construction and, ultimately, helps them find and retain employment (see Figure 3). As the name implies, the Funnel is based on the premise that more residents need to be recruited to the program than are engaged in skills development activities and deemed qualified to be placed into employment. Skills development activities are tailored to individual needs and may include basic math and literacy education, job readiness, and introductory, occupation-specific education in preparation for jobs as iron workers, laborers, sheet metal workers, or operating engineers.

The funnel has reported that program participants have a greater attachment to employment and greater annual earnings after enrolling in the program (Redstone Research 2009). The state has provided funds to replicate the Job Funnel in other cities undertaking other major development projects. However, the state has yet to establish local hiring goals elsewhere.

Figure 3

JOBS FUNNEL PARTICIPATION FLOW



Source: Redstone Research.

By targeting hiring based on income, race, and gender, rather than by location of residence, Missouri DOT has dodged a federal prohibition on giving local workers preference for jobs on federally funded highway projects.⁴⁰ Other states can follow the lead of Missouri by adopting similar targeted hiring provisions and leveraging federal highway funds to pay for skills development activities.

In addition, **Missouri** is leading the country in enforcing a little-known federal policy that encourages the hiring of low-income individuals and subcontractors for subsidized housing construction projects funded through the U.S. Department of Housing and Urban Development (HUD) (see box). It is time for other states to take action as well.

► First-Source Referral

Another way states can expand access to construction jobs for low-income and disadvantaged workers is by

designating the process by which construction companies are expected to fill open positions. Under a first-source referral agreement, employers commit to visiting a particular site, such as an apprenticeship prep program, community center, or one-stop career center, as their “first source,” or first place, for interviewing job applicants for at least a certain portion of open positions. Employers agree to give job applicants from the first-source center advance notice of the jobs and refrain from hiring outside the system for the first few days or weeks of the hiring period; however, employers are not bound by any obligation to hire first-source applicants (Mulligan-Hansel 2008).

To date, no states have implemented a first-source referral requirement for publicly funded construction projects. The Hartford Job Funnel is similar to a first-source referral system, in that city residents are recruited,

MISSOURI'S EFFORT TO ENFORCE HUD'S "SECTION 3" TARGETED HIRING POLICY

The Housing and Urban Development Act of 1968 carries a little-known provision, Section 3, which requires that public housing residents or other local, low-income individuals are hired and trained for at least 30 percent of new, full-time construction jobs created on HUD-funded construction or rehabilitation of subsidized housing. In addition, Section 3 requires that 10 percent of project funds be awarded to low-income subcontractors.⁴¹ Section 3 applies to construction projects through Public and Indian Housing, Community Development Block Grant, and HOME, Lead-Based Paint Abatement, among other HUD programs.

Section 3 rarely has been implemented effectively. Contractors are expected to comply with the hiring requirements to “the greatest extent feasible.” However, state and local housing authorities have done a poor job enforcing contractor compliance. And, even when contractors do hire low-income workers, they typically perform menial tasks and often are let go at the end of the project. The lack of steady employment and access to on-the-job skills development opportunities has hampered the ability of low-income workers to build construction careers. Despite these shortcomings, there is renewed interest at federal and state levels to add teeth to Section 3 (Sard and Kubic 2009).

The Missouri Housing Development Commission (MHDC) has taken steps to improve contractor compliance with Section 3, after community advocates filed a formal complaint with HUD against the state and city of Kansas City for poorly enforcing the hiring rule. Prior to the legal action, Missouri had passively enforced Section 3, like many other states, by simply having contractors put in writing that they were in compliance. Now, MHDC has developed extensive contractor guidelines for HUD programs administered by the state, including HOME.⁴² MHDC requires contractors to set employment and skills development goals, establish outreach strategies, and give evidence of their efforts. In addition, MHDC certifies subcontractors and individuals as Section 3 eligible and actively seeks to connect them to contractors who may be hiring.

As a result, MHDC officials report that the number of low-income subcontractors receiving work on Missouri affordable housing projects has increased year-to-year. However, low-income hiring goals have continued to go unmet because of limited job opportunities and overall disinterest of housing residents out of fear that obtaining employment would disqualify them from subsidized housing. MHDC has begun taking other steps to find job candidates, including posting job notices at one-stop career centers and partnering with apprenticeship prep programs.

Missouri's enforcement of Section 3 hinges on the continued commitment of MHDC, which has assigned a full-time staff member to oversee contractor compliance. The state has not enacted a formal policy through law, regulation, or executive order to hold MHDC to its enforcement measures. These limitations aside, Missouri's efforts reflect a major advancement compared to other states in proactively enforcing Section 3 hiring and subcontractor goals, and has led HUD to improve technical assistance and guidance to other state and local housing authorities.

Other states can follow Missouri's lead by dedicating agency staff to enforce contractor compliance and by building partnerships with workforce development entities to raise awareness and preparation of low-income individuals for jobs on affordable housing projects. In the absence of meaningful policy reform of Section 3 at the federal level, states should take the initiative to establish stronger state guidelines for skills development and job retention, at least for housing projects that also receive state funding. States should ensure low-income workers have access to skills development opportunities on the job, by requiring contractors to partner with registered apprenticeship and apprenticeship prep programs. States also should consider offering incentives to contractors for hiring, training, and/or retaining low-income workers, in the form of wage subsidies, as Wisconsin DOT has done with its highway construction program (see page 10). States should formalize these enforcement measures in state law or regulation.

prepared, and provided assistance with finding employment. Moreover, development agreements stipulate that developers and their contractors give Funnel participants first consideration when jobs become open, as a means to achieve the 30 percent local hiring goal. And, many contractors regularly contact Funnel staff when jobs are available, in order to find qualified candidates to interview. However, unlike a first-source agreement, employers on the Hartford projects are not required to give Funnel applicants advance notice of job openings nor to refrain from hiring outside the system for the first few days or weeks of the hiring period.

Examples of first-source agreements abound at the local level. East Palo Alto, CA, has passed a city ordinance that requires developers and contractors on any construction projects receiving a public subsidy of at least \$50,000 to participate in a first-source referral system for placing city residents into jobs. The ordinance sets a local hiring goal of 30 percent of jobs. In other cases, first-source agreements have been struck for specific, local projects and negotiated between developers and community advocates, rather than signed into law (Mulligan-Hansel 2008).

States should follow the example of East Palo Alto and enact a law requiring construction developers and contractors on publicly funded projects to participate in a first-source referral system for hiring targeted populations. As one approach, states can use first-source agreements as a mechanism for hiring apprenticeship prep graduates as apprentices on publicly funded projects. To do so, states should require that a certain percentage of apprentices indentured on projects come

from identified apprenticeship prep providers, acting as the first-source referrer. When coupled with apprenticeship utilization requirements, this would ensure sufficient demand for hiring apprentices.

By coupling the first-source mandate with targeted hiring goals and investments in education and skills development, states can ensure that first-source jobs applicants are ready to work and that employers have incentive to hire them. In addition, states should set criteria for the types of services provided through first-source referral systems. Research shows that well-designed and operated first-source referral systems coordinate worker recruitment and screening; liaise with developers and employers; refer workers and support them as they navigate the hiring process; and link workers with support services that can help them stay on the job (Mulligan-Hansel 2008).

Strengthen job quality

It is not enough just to expand access to jobs on construction projects for previously excluded worker populations, including low-income, low-skilled adults, women, and minorities. States also should make efforts to improve the quality of jobs to ensure workers can provide for their families and have safe working conditions. There are five indicators of job quality that states should strengthen: safety, wage/hour compliance, sustainable wages and benefits, employment classification, and education and skills development (see Table 8). Doing so would support construction companies that invest in the well-being and skills development of their workers.

Table 8

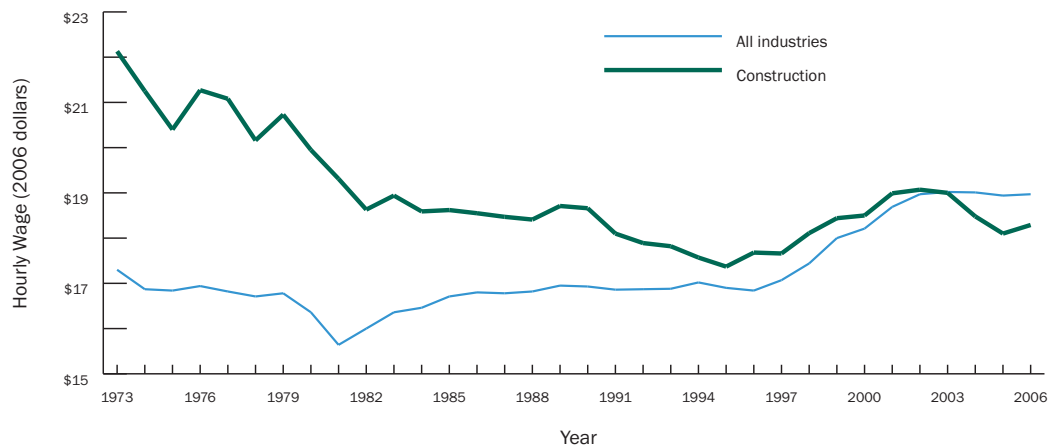
STATE POLICY SOLUTIONS FOR STRENGTHENING JOB QUALITY

Job Quality Indicator	Low-Quality Employer Practices	State Policy Solutions
Safety	Little or no safety training	Require employers to provide 10 hours of Occupational Safety and Health (OSHA) training.
Wage/hour compliance	No documentation of payment of wages for all hours worked; outright violations	Require employers to demonstrate no violations in past three years.
Sustainable wages & benefits	Low wages (\$8.50 or less), no health insurance, paid sick leave, etc.	Require employers to pay prevailing wages; require provision of health insurance and paid sick days.
Employment classification	Misclassification of workers as independent contractors to avoid workers' compensation, social security payments, other benefits	Require employers to show they have hired employees.
Education and skills development	No investment in education and skills development	Require employers to participate in registered apprenticeship programs; contribute funds to education and skills development.

Source: The Partnership for Working Families. Author adaptation.

Figure 4

AVERAGE HOURLY WAGE, CONSTRUCTION AND ALL INDUSTRIES, 1973-2006 (WAGE AND SALARY WORKERS)



Source: The Center to Protect Workers' Rights.

One indicator in particular—sustainable wages and benefits—requires further discussion. Stronger advocacy for sustainable wages is needed now more than ever, as average wages for construction jobs have declined steeply since the 1970s and are now below the average wages for all other industries (see Figure 4). The proportion of construction workers covered by health insurance is below average, and the construction industry has relatively high rates of work-related deaths and injuries. Over the years, unions have successfully won higher wages and better benefits on construction projects, but as union membership has subsequently declined, wages and benefits have deteriorated. The proportion of construction workers in unions fell from 50 percent in 1966 to 15 percent in 2004 (Weil 2005).

Guaranteeing good wages at least on publicly funded construction projects has a long tradition, marked by efforts to weaken and strengthen wage protections. Under the Davis-Bacon Act, passed in 1931, the federal government required construction employers on federally funded projects to pay workers, at a minimum, wages and fringe benefits that have been determined to be the “prevailing” rate for their occupation on similar projects in the same locality.⁴³ Prevailing wages are set for four types of construction—building, residential, heavy, and highway.

Thirty-two states and the District of Columbia enforce similar prevailing wage laws for state-funded construction projects; eight states have never adopted

such a policy, while 10 others repealed previous laws (Dominic 2005) (see Figure 5).

Prevailing wages have come under political attack over allegations of raising project costs, but most research concludes the opposite (Fiscal Policy Institute 2006). Nonetheless, cost concerns and general anti-union sentiment have led some states to repeal state prevailing wage laws. Meanwhile, other states have sought to strengthen their policies. Ohio released new guidance in 2008 clarifying that prevailing wage rates apply to all construction receiving public funds, including private development projects.⁴⁴

The method of setting prevailing wage rates is complex, and could be in need of re-evaluation in states or local areas where wage levels are not sufficient. On a federal level, President Ronald Reagan revised the way the prevailing wage is now calculated in each region by instituting the 50 percent rule, which sets prevailing wage rates based on the wage paid to more than 50 percent of workers in a similar classification of work and in a similar type of project in a defined locality. In areas where unions are weak, the rule has had the effect of lowering the prevailing wage (Swanstrom 2009). At the very least, states should ensure rigorous enforcement of existing prevailing wage rates and examine ways to expand the reach to all construction projects receiving state funds. In addition, states should demand that employers on publicly funded construction projects provide health insurance and paid sick days to workers.

Reform contracting procedures

Getting more low-income and disadvantaged workers into well-paid construction careers may require states to reform contracting procedures in ways that reward construction contractors that invest in the well-being and skills development of their workers. Continuing to award construction contracts simply on the basis of the lowest bid, without regard for whether the winning company is committed to family-sustaining wages, education, skills development, and good working conditions, will make it difficult, if not impossible, to achieve many of the goals presented in this report. For instance, if contractors that provide apprenticeships do not win projects, then they will have less need to take on new apprentices, limiting skills development opportunities for apprenticeship prep graduates and wasting any state investment in prep programs.

States have three approaches to reforming contracting procedures in ways that support contractors that offer high-quality jobs: pre-qualification requirements, responsible bidder requirements, and project labor agreements.

Pre-qualification statutes require construction firms to meet certain qualifications before they are allowed to bid on a contract (Scharnau and Sheehan 2004). In contrast, responsible bidder provisions require the winner of

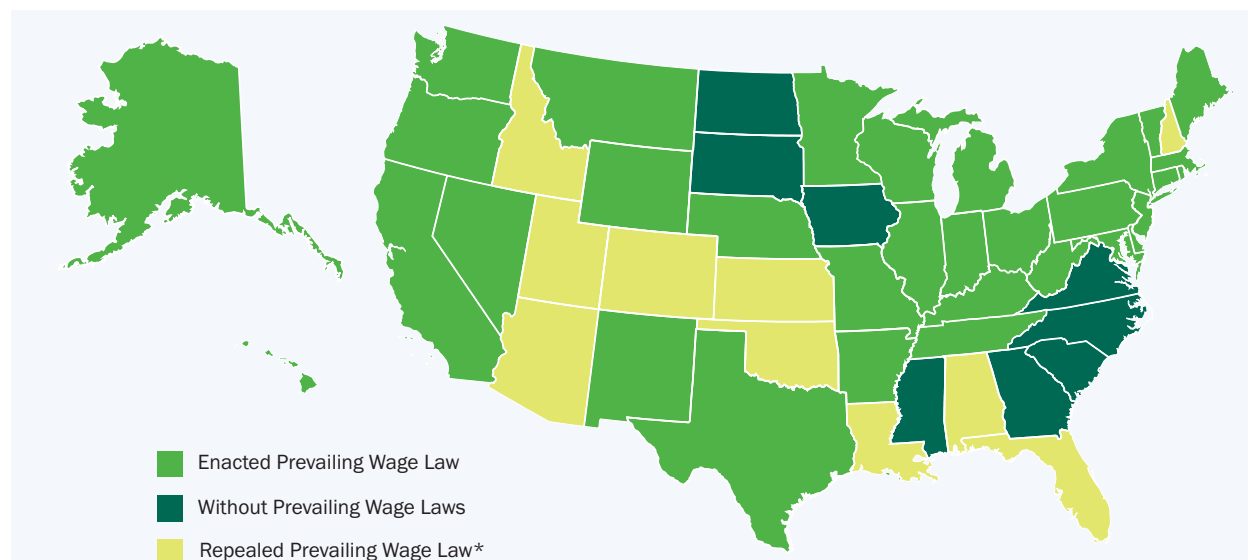
a project bid to demonstrate compliance with certain criteria ultimately to be awarded the contract. Both policies ensure that states can disqualify contractors who offer the lowest bid but have a record of shoddy work, failure to complete assigned task, and a poor labor record.

Several states have adopted responsible bidder and pre-qualification policies, including California, Delaware, New Jersey, New York, Ohio, and West Virginia, among others.⁴⁵ States should add employment and skills development criteria to responsible bidder and pre-qualification statutes (see Figure 6). As one example, states can add to the pre-qualification process that bidders demonstrate an affiliation with a registered apprenticeship program that meets minimum standards in terms of graduation rates and recruitment of women and minorities. Then, successful bidders could be required to provide apprenticeships as a condition of being awarded the contract. The approach also can be used to require contractors to meet other project goals, such as targeted hiring for apprenticeships or delivery of apprenticeship prep programs (Rubin and Slater 2005).

Nonetheless, bid provisions and contract requirements are difficult to enforce once contractors meet the qualifications and are awarded the contract (Rubin and Slater 2005). A project labor agreement

Figure 5

STATES WITH PREVAILING WAGE LAWS



*The enforcement of Oklahoma's law was judicially suspended in 1995.

Source: Ohio Legislative Services Commission.

(PLA) is one approach to holding employers accountable throughout the length of the project.

A PLA is an enforceable agreement governing the wages, benefits, work hours, hiring process, and dispute resolution process for all workers and contractors on a project. The agreement is collectively bargained between unions, the private or public developer of the project, and the general contractor. Unions agree not to engage in any strikes, and the developer agrees to require contractors to hire union workers and pay into union pension and health funds. Although unions play an important role in negotiating PLAs and are ensured work on the project, nonunion contractors often work on projects bound by PLAs as well. They are required to abide by the same job standards, safety protocols, and conflict resolution strategies.

PLAs ensure that workers will be paid well, treated fairly, and have access to apprenticeships. Numerous public and private construction projects have used PLAs over the last 75 years. But they have fueled political battles at the national level and in states just like prevailing wage laws. President Barack Obama has signed an executive order to overturn a Bush-era prohibition of PLAs on federally funded construction projects.⁴⁶ Support for PLAs has flip-flopped between Republican and Democratic administrations dating back to George H.W. Bush. PLAs may not be the right approach to strengthening job quality standards in states with low union participation. Twenty-two states have adopted “right-to-work” laws, which prohibit agreements between unions and employers making membership or payment of union dues a condition of employment, either before or after hiring (see a listing in Appendix, Figure A3).

Several other states have enacted policies that expressly permit the use of PLAs on state-funded construction projects, such as Illinois,⁴⁷ New York,⁴⁸ and New Jersey. Other states can follow suit. States should take a step further by requiring the use of PLAs on construction for any projects that receive over a certain dollar figure of state funding or subsidy. Advocates in New York are seeking to reform the state’s use of industrial revenue bonds to require PLAs on large private construction projects receiving state subsidy.

In addition, states should take steps to ensure low-income working families benefit from projects bound by a PLA. States can add provisions to PLAs to establish targeted hiring goals and require unions to help fund an apprenticeship prep program and give first consideration to participants when seeking new apprentices.

Figure 6

KEY EMPLOYMENT AND SKILLS DEVELOPMENT CRITERIA FOR RESPONSIBLE CONTRACTOR STANDARDS

- No wage/hour violations for the past three consecutive years
- Provide OSHA 10-hour safety training
- Participate in registered apprenticeship program
- Pay prevailing wages and offer health insurance
- Provide all benefits of employment to their workforce (including social security, workers compensation, and unemployment insurance)

Source: The Partnership for Working Families. Author adaptation.

New Jersey enacted a 2002 law encouraging the use of PLAs on building construction projects funded with state dollars.⁴⁹ The law requires that contractors on projects bound by a PLA participate in apprenticeship programs, develop a plan in compliance with all applicable state and local laws for the share of jobs and apprenticeship positions to go to minorities and women, and contribute funds to prepare sufficient numbers of women and minorities for apprenticeship in order to achieve hiring goals. In addition, the law requires the New Jersey Department of Labor and Workforce Development to submit an annual report to the governor and legislature comparing projects using PLAs to non-PLA projects, in terms of cost, efficiency, quality, timeliness, and skilled labor force and safety.

According to the 2005 annual report, PLAs were adopted in 17 out of a possible 121 construction projects; all 17 projects fell under a PLA set up between the state’s School Construction Corporation, New Jersey Building and Construction Trades Council, and several unions, for projects funded through the state’s \$8.6 billion school construction program (referred to earlier on page II for its use of project funds for apprenticeship prep). The report found that PLA projects tended to perform better than non-PLA projects in employing minorities and apprentices, but both types of projects continued to struggle to employ ample numbers of women in the trades. More than half of graduates of the project-funded apprenticeship prep program entered construction occupations.⁵⁰

HIRING, JOB QUALITY, AND CONTRACTING POLICY RECOMMENDATIONS

To expand access to construction-related careers, states must find ways to encourage employers on publicly funded projects to provide low-income adults with good jobs, family-sustaining wages, benefits, and safe work conditions. Several states have taken bold and innovative steps to raise employer demand for hiring low-income adults and to reward employers that invest in the well-being and skills development of workers. It is time for other states to follow suit, by holding employers to hiring requirements and high standards for job quality—as described below.

1. Establish hiring preferences on publicly funded projects for low-income, under-represented, and entry-level workers.

- ▶ Adopt apprenticeship utilization requirements for publicly funded construction projects to expand access to employment and skills development for entry-level workers.
- ▶ Require that a minimum percentage of work hours on publicly funded construction projects are performed by a targeted population, which could include residents nearby project sites, low-income adults, minorities, or women.
 - Establish income-based hiring mandates for federal transportation projects, in compliance with U.S. Department of Transportation rules, and other state and federally funded construction projects.
 - Improve enforcement of U.S. Department of Housing and Urban Development's Section 3 policy, to ensure contractor compliance with hiring goals for low-income workers. In addition, states should take steps to increase access to skills development opportunities on the job and to improve job retention, by mandating partnerships with registered apprenticeship programs and by offering wage subsidies.
 - Improve enforcement of federal and state equal employment opportunity laws and affirmative action employment goals for women and minorities on publicly funded construction projects.
- ▶ Adopt a first-source hiring agreement on publicly funded construction projects to require employers to give initial consideration for jobs to targeted

populations participating in a designated skills development and readiness program.

2. Strengthen job quality standards to ensure safe working conditions and family-sustaining wages and benefits.

- ▶ Require employers to comply with these standards:
 - 10 hours of Occupational Safety and Health (OSHA) training
 - No wage violations in past three years
 - Payment of prevailing wages and provision of health insurance and paid sick days
 - Proper classification of workers and contributions to social security, unemployment, and workers compensation taxes
 - Participation in registered apprenticeship program and contribution of funds to education and skills development.
- ▶ Adopt, strengthen enforcement, and/or broaden applicability of state prevailing wage laws.

3. Reform contracting procedures to reward construction firms that invest in the well-being and skills development of their workers.

- ▶ Require use of responsible bidder and pre-qualification procedures on publicly funded construction projects, and establish criteria for project approval in line with job quality standards (listed above).
- ▶ Expressly permit and/or require the use of project labor agreements (PLA) on publicly funded construction projects, and ensure PLAs include provision for funding apprenticeship prep programs and setting targeted hiring goals.

NEXT STEPS AND RECOMMENDATIONS

States have both a responsibility and significant untapped resources that can help hard-working, low-income families obtain good jobs on publicly funded construction projects. Demonstrating their ability to leverage capital and infrastructure investments, several states have adopted policy strategies that increase the supply of low-skilled, low-income adults ready and prepared to work and that ensure employers have an interest and commitment to hiring those workers. In most of these cases, advocates played a critical role in making these policies a reality. Now, at a time when families are struggling to get by in the economic downturn, advocates are encouraged to promote state policy changes that can increase access to construction-related careers and green jobs for low-skilled, low-wage adults. This section outlines effective strategies that can help achieve policy change.

Research shows that supply and demand policies work best when they are paired together. Hiring targets are more likely to be met if programs are set up to train workers and refer them to available jobs. Likewise, education and skills development programs are more likely to result in employment if capital and infrastructure projects provide ample job opportunities targeted to participants. In addition, a strong commitment to job quality ensures skills development and employment policies succeed in raising the self-sufficiency of low-income families. Finally, by leveling the playing field for contractors that are committed to high-quality jobs, states can be assured that public investments leverage high-quality employment opportunities.

Ideally policy recommendations identified in Sections 2 and 3 of this report will be paired. But the political and policy realities of each state will differ. Advocates must first learn about existing state contracting and skills development systems before identifying the best strategies to advance. For example, a state with a strong concentration of labor unions may be receptive to using project labor agreements (PLAs) as a means to ensure job quality, education and skills development, and hiring targets. In contrast, PLAs are not as suitable for states with weak labor presence. On the other hand, efforts to expand access to apprenticeships can and should take place in union-heavy states as well as “right-to-work” states—the difference is in who provides the education and training of workers. Furthermore, states that directly oversee registered apprenticeship programs have greater latitude to adopt some policy reforms, such as mandated

partnerships with apprenticeship prep programs, than those states under federal oversight. The distinction, however, should not matter in building greater ties to the one-stop career center system. Many other policies—including hiring targets, career pathways, project-based funding for skills development, and responsible bidder and pre-qualification requirements—can be implemented in all states.

To advance these issues, advocates can embark on a five-step plan to achieve effective policy change.

1. Build issue expertise and key relationships.

For credibility, advocates need to develop expertise in several state policy areas, to build an effective case for why and how states can move low-income working families into work on publicly funded construction and clean energy projects. This means having an understanding of the status of available workers, the skills needed for new workers, and the conditions of employment in these sectors. Advocates should check whether the state is currently leveraging capital and infrastructure investments to provide skills development opportunities, such as the federally permissible one-half of one percent of highway dollars. Advocates need to know the landscape before promoting changes.

► **Know the state players.** It is also important to learn who the key players, both administrative and legislative, are in the state infrastructure system. What agency spends the most funds? Who approves the expenditures? Who awards the contracts? Who has contract-monitoring responsibility? What role does the legislative branch play?

- ▶ **Know the contracting system.** Developing expertise will include learning about the state process for awarding contracts for capital projects, including laws regulating job quality standards and minority contracting provisions. Do contracts always go to the lowest bidder? The contracting regulations and systems may differ depending on the funding source and purpose of the project. Do not assume that agencies as diverse as housing and transportation have the same rules on contracting.
- ▶ **Know the skills development systems.** Developing expertise includes understanding existing connections between the state's education and skills development systems and public infrastructure projects and identifying who provides education and skills development for construction workers and green jobs. Advocates should learn about the opportunities and challenges within the registered apprenticeship system to address skill challenges; the capacity for a more robust, effective network of apprenticeship prep programs; and the opportunities to align existing workforce development systems and community college initiatives, such as career pathways, to efforts to prepare low-skilled adults for construction careers.
- ▶ **Know the employers.** Identify large private sector contractors who bid on and win public contracts. Learn who the big players are. Are they involved with the workforce development system via the workforce investment boards? By meeting private contractors you can learn about the business-side needs and identify places of shared interest, including the skills development of workers.

As with all systems, existing players, whether they are state agencies, contractors or skills development providers, may resist change if they perceive it will create more work or obstacles.

2. Create the climate for change, by educating the public and policymakers about opportunities and shortcomings.

Once advocates have a strong understanding of the policy landscape, they should develop an effective message for state action.

- ▶ **Develop a message that has a values perspective.** Focus on why the state should act to help low-income working families build construction careers. Identify problems like too few good jobs

for certain groups, too few skilled workers from local communities, too little benefit from the state's investment in infrastructure. Identify opportunities that will solve the problem and achieve better outcomes. Cite examples from other areas where public infrastructure dollars are benefiting low-income workers through skills development and employment standards. Possible values perspectives are:

- Get a better return on the state's public investment in infrastructure and energy needs. This money is already being spent – make better use of the public money. Get more for state residents.
 - Increase fairness in construction and energy sectors. Help level the playing field in sectors that have shut out certain workers.
 - Prepare the state for future workforce needs. Given the aging labor force, preparing a more diverse workforce will help strengthen the state's future energy and infrastructure needs.
- ▶ **Get the message out.** Advocates can garner attention to this issue by crafting an agenda for change. Preparing a research report will help attract media attention. Hold a media event calling for change. Advocates may want to host a conference with key stakeholders to educate policymakers and advocates and highlight the missed opportunities and policy solutions that will increase skills and jobs for low-income workers. A conference or media event can help galvanize support. Where useful, advocates should consider forming a coalition to strengthen the message.

3. Identify state leadership that can open the door to policy change.

To advance the policies identified, advocates should build relationships with key legislators and agency officials with oversight over key issues.

- ▶ On the legislative side, this means identifying lawmakers and committees that oversee the state capital, energy, and transportation budgets and lawmakers and committees that oversee education and skills development systems. Educate lawmakers with expertise in these areas about the opportunities and potential outcomes for state residents.
- ▶ On the administrative side, this means getting to know agencies involved in the workforce develop-

ment system, transportation, public works, and capital projects. In addition, advocates should consider the influence of other governing bodies with potential leverage, including the state workforce investment board, boards overseeing federal stimulus funds, or the state apprenticeship council. The purpose is to identify a leader who will help champion policy change. Having an ally inside the system can help.

- ▶ Other potential private-sector leaders include unions, employers, skills development providers, and faith communities. Influence often exists in these communities. Cultivate support and alliances that promote the policy agenda.

4. Zero-in on specific policy areas to change.

Advocates need to focus their energies in a specific policy area or on a particular infrastructure opportunity.

- ▶ **Identify the best strategy.** Is an opportunity available in an issue that is already in front of policymakers and likely to be approved? Should attention be called to the need for a whole system change? If a state has announced plans to spend millions to build a new road, renovate or retrofit public buildings, or develop new green energy opportunities, advocates can use those opportunities to help increase the return on the public investment. Likewise, if the state plans to revise regulations for the registered apprenticeship system or reform the contracting policy (perhaps following some scandal), advocates could focus reform efforts there. Once the specific policies or projects have been identified, advocates must develop a strategy for change.
- ▶ **Focus on state policy opportunities that address a system change.** The policy recommendations should include specific actions under the purview of the state. This includes legislation and regulations that address contracting procedures, jobs quality or policies, and the allocation, awarding, and monitoring of resources.
- ▶ **Recognize this is a long-term project.** While some change comes quickly, often system change takes years of education and attention. Even when progress is made immediately, follow-up will be needed.

▶ **Additional relationship-building will be needed.**

Having already developed relationships, advocates will have a sense of which stakeholders are likely allies and how best to address concerns and opposition. Broad-based support will increase the likelihood of success. Some of the groups that will have an interest in this issue are the state agency with oversight over the project or policy, private developers and general contractors seeking to bid on projects, subcontractors that directly employ skilled workers and operate apprenticeship programs, building and construction trade unions, building trade union councils, community-based and faith-based organizations that represent the employment needs of low-income communities, apprenticeship prep providers, elected officials, foundations, education and skills development providers, including one-stop career centers and community and technical colleges, and environmental groups interested in building green-collar jobs in the construction sector.

5. Monitor policy implementation.

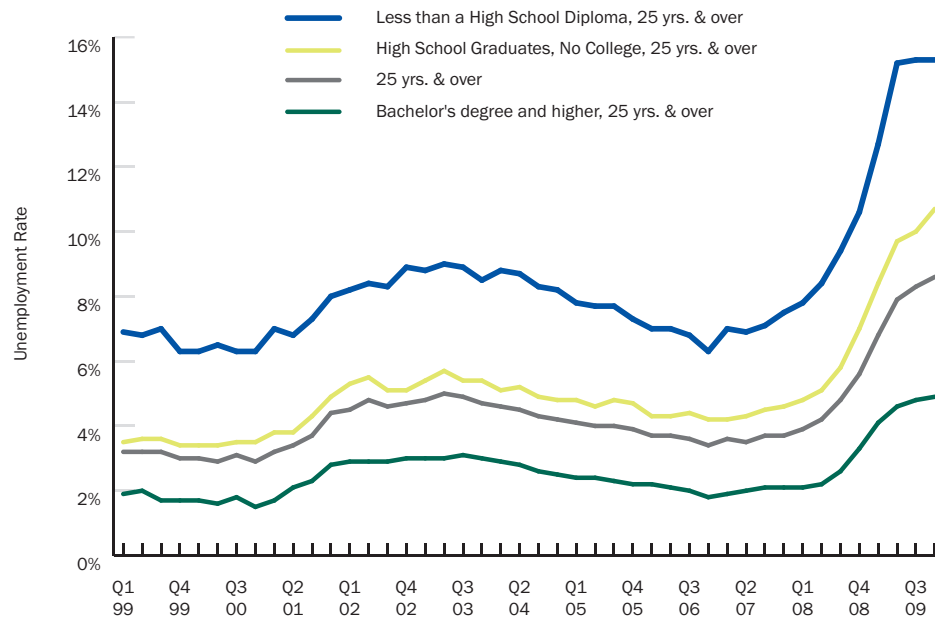
After state policies are adopted, advocates should keep a close watch over implementation. Strong accountability and enforcement measures, such as the public release of regular progress reports and requiring staff to oversee policy compliance, will help ensure that the desired impact is achieved. Advocates should ensure the state is following through with these accountability and enforcement measures and implementing corrective actions if problems occur. In addition, advocates should maintain ongoing communication with allies who are working directly to get low-income adults employed on construction projects. Their on-the-ground perspective can provide much-needed, real-time feedback about the effectiveness of certain policies.

State policies are ripe for reform. Given the public investments, it would be unfortunate to neglect the opportunity to advance the skills and employment for low-income, low-skilled workers in the construction and green jobs areas. States and the federal government spend billions of dollars annually upgrading and developing transportation, building schools, creating water and sewer systems, and retrofitting public buildings. Creating policies that will advance low-income, low-skilled adults into good jobs that are created with public dollars is a win-win opportunity.

APPENDIX

Figure A1

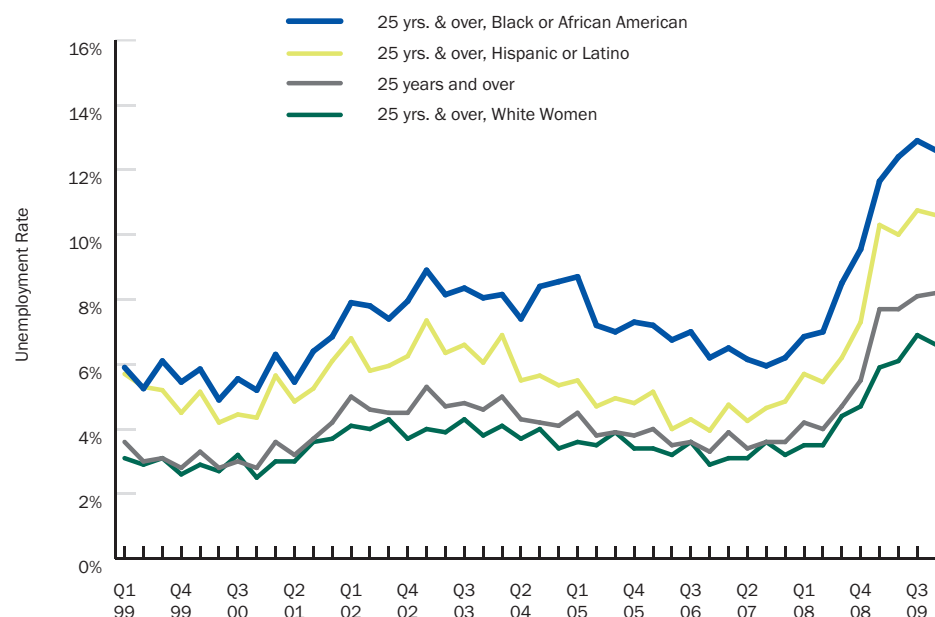
UNEMPLOYMENT BY EDUCATIONAL LEVEL (SEASONALLY ADJUSTED, QUARTERLY)



Source: U.S. Bureau of Labor Statistics.

Figure A2

UNEMPLOYMENT BY RACE, ETHNICITY, AND SEX (NOT SEASONALLY ADJUSTED, QUARTERLY)



Source: U.S. Bureau of Labor Statistics.

Table A1

WOMEN AND MINORITY PARTICIPATION IN TOP CONSTRUCTION OCCUPATIONS

Occupation	Minority & Women (%)	Minority & Women (#)	2008 Median Wage* (\$)	Education/Skills Development
Cement masons, concrete finishers, and terrazzo workers	65.2	58,680	17.06	Cement masons: Moderate-term on-the-job training; Terrazzo workers: Long-term on-the-job training
Helpers, construction trades	64.8	73,224	12.22	Short-term on-the-job training
Drywall installers, ceiling tile installers, and tapers	63	13,1670	19.58	Moderate-term on-the-job training
Construction laborers	56.8	937,768	13.71	Moderate-term on-the-job training
Painters, construction and maintenance	55.9	361,673	15.85	Moderate-term on-the-job training
Roofers	53	124,020	16.17	Moderate-term on-the-job training
Brickmasons, blockmasons, and stonemasons	48.9	112,470	20.06	Long-term on-the-job training
Carpet, floor, and tile installers and finishers	47.9	107,296	16.61	Moderate-term on-the-job training
Carpenters	34.5	538,890	18.72	Long-term on-the-job training
Highway maintenance workers	29.3	30,179	16.35	Moderate-term on-the-job training
Pipelayers, plumbers, pipefitters, and steamfitters	27.9	16,9074	18.83	Plumbers: Long-term on-the-job training; Pipelayers: Moderate-term on-the-job training
Electricians	25.8	225,492	22.32	Long-term on-the-job training
Construction and building inspectors	25.7	23,901	24.12	Work experience in a related occupation
Operating engineers and other construction equipment operators	24.5	97,510	18.88	Moderate-term on-the-job training
Sheet metal workers	24	32,640	19.37	Long-term on-the-job training
First-line supervisors/managers	23	194,120	27.95	Work experience in a related occupation
Structural iron and steel workers	17.8	13,706	20.68	Long-term on-the-job training

*Wages reported in blue typeface are an average of two or more occupations listed on the row.

Source: U.S. Bureau of Labor Statistics.
Author calculations.

Table A2

WOMEN AND MINORITY OVERALL PARTICIPATION IN CONSTRUCTION (2008)

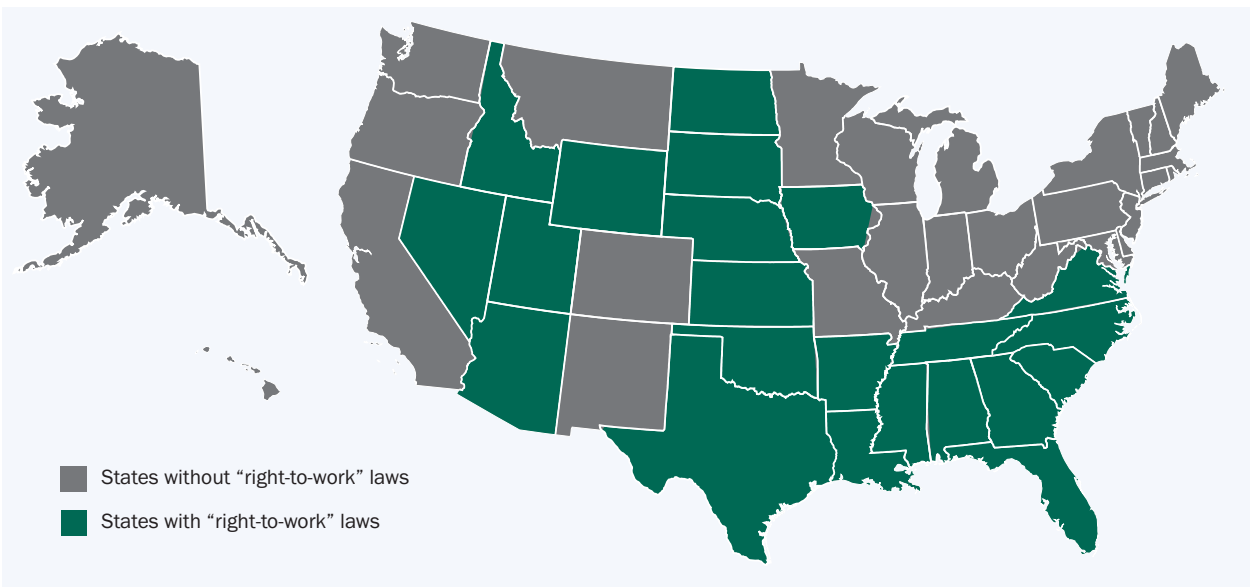
Demographic	# Employed in Construction	% of Construction Workers	% Share of U.S. Labor Force
Women	216,675	2.5	46.7
Black	546,021	6.3	11
Hispanic	2,565,432	29.6	14

Source: U.S. Bureau of Labor Statistics.

Figure A3 STATES WITH “RIGHT-TO-WORK” LAWS

Figure A3

STATES WITH “RIGHT-TO-WORK” LAWS



Source: Wikipedia.

Table A3 15 CONSTRUCTION TRADES WITH THE LARGEST NUMBER OF APPRENTICES (PLUS ASPHALT PAVING).

Table A3 15 CONSTRUCTION TRADES WITH THE LARGEST NUMBER OF APPRENTICES (PLUS ASPHALT PAVING).

Occupational Title	# of hours (2,000~1 year)	Type of Training
BRICKLAYER	6,000	Time-Based
BRICKLAYER	4,500-8,000	Hybrid
CARPENTER	5,200-8,000	Hybrid
CARPENTER	8,000	Time-Based
CEMENT MASON	4,000	Time-Based
CONSTRUCTION CRAFT LABORER	4,000-5,700	Hybrid
CONSTRUCTION CRAFT LABORER	4,000	Time-Based
OPERATING ENGINEER	4,000-6,000	Hybrid
OPERATING ENGINEER	6,000	Time-Based
ELECTRICIAN	8,000	Time-Based
INSULATION WORKER	8,000	Time-Based
PAINTER	6,000	Time-Based
PIPE FITTER	8,000	Time-Based
PLUMBER	8,000	Time-Based
ROOFER	4,000	Time-Based
SHEET METAL WORKER	8,000-10,000	Hybrid
SHEET METAL WORKER	8,000	Time-Based
STRUCTURAL STEEL/IRONWORKER	6,000	Time-Based
STRUCTURAL STEEL/IRONWORKER	6,000-8,000	Hybrid
HVAC INSTALLATION AND SERVICE	6,000	Time-Based
MILLWRIGHT	5,200-8,000	Hybrid
MILLWRIGHT	8,000	Time-Based
ASPHALT PAVING MACHINE OPERATOR	6,000	Time-Based

Source: Government Accountability Office, U.S. Department of Labor Office of Apprenticeship.

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ENDNOTES

- ¹ The Working Poor Families Project, working with the Population Reference Bureau, generate these data from the American Community Survey 2007 using the following definitions crafted by WFPF: A family is defined as a primary married couple or single-parent family with at least one child under the age of 18. Work is defined as a combined family work effort of 39 or more weeks in the last 12 months or a combined work effort of 26 weeks and at least one currently unemployed parent looking for work in the previous four weeks. Low-income working family is defined as a family earning less than 200 percent of the poverty income threshold as defined by the U.S. Census Bureau for 2007, which was \$41,902 for a family of four.
- ² Unemployment among construction and extraction workers tends to ebb and flow due to the seasonal nature of work. The burst of the housing bubble, which helped send the national economy in a tailspin, has left millions of construction workers out of work. Unemployment among construction workers was 17.1 percent in September 2009, up from 9.9 percent a year ago and nearly twice the overall jobless rate, 9.5 percent.
- ³ Research suggests that baby boomers, who accounted for 40 percent of the construction workforce in 2005, are retiring earlier from careers in construction-related occupations than those in the overall labor force (Center to Protect Workers' Rights 2008). The federal government is projecting that construction and extraction employers will need to hire 146,000 new workers each year, from 2006 to 2016, to replace workers retiring or otherwise leaving the industry. Meanwhile, growth in the construction and extraction sector is expected to create jobs for another 78,500 workers each year (Dohm and Shniper 2007).
- ⁴ The Working Poor Families Project examined state policy reforms for tying state economic development expenditures to training and hiring requirements. See: WFPF/EARN Economic Development Academy: www.workingpoorfamilies.org/reports_and_pubs_more3.html.
- ⁵ U.S. DOT On-the-Job Supportive Services policy: www.fhwa.dot.gov/environment/ejustice/140.htm; www.fhwa.dot.gov/civilrights/eeo.htm.
- ⁶ Advocacy efforts by the Transportation Equity Network: http://transportationequity.org/index.php?option=com_content&task=view&id=17&Itemid=34.
- ⁷ Wisconsin's Transportation Alliance for New Solutions program: www.dot.wisconsin.gov/business/engrserv/newsletter/qtr1/trans.htm.
- ⁸ Michigan Road Construction Apprentice Readiness program: www.michigan.gov/nwlb/0,1607,7-242-52874-210085--,00.html.
- ⁹ Minnesota statute requiring use of training funds and submission of biannual report: www.revisor.leg.state.mn.us/statutes/?id=174.03.
- ¹⁰ Minnesota biannual report on training outcomes: <http://archive.leg.state.mn.us/docs/2009/mandated/090487.pdf>.
- ¹¹ New Jersey Construction Trades Training Program for Women and Minorities: www.doleta.gov/Performance/Results/AnnualReports/PY2007/NJ_WIA_Annual_Report_Narrative-2008.pdf.
- ¹² Washington Evergreen Job Act (summary): <http://apps.leg.wa.gov/documents/billdocs/2009-10/Pdf/Bill%20Reports/House%20Final/2227-S2.E%20HBR%20BR%2009.pdf>.
- ¹³ Illinois Urban Weatherization Initiative (see Article 40): www.ilga.gov/legislation/96/HB/PDF/09600HB2424sam001.pdf.
- ¹⁴ Massachusetts Green Jobs Bill (see Section 11 and 13): www.mass.gov/legis/laws/seslaw08/sl080307.htm.
- ¹⁵ Massachusetts "Pathways out of Poverty" green collar job training grants: www.masscec.com/index.cfm?cdid=10462&pid=10225.
- ¹⁶ Massachusetts clean energy workforce development grants: www.masscec.com/index.cfm?cdid=10725&pid=10225.
- ¹⁷ Beginning apprentices' wages generally start at about 40 percent of the wage earned by journey-level workers, who are certified in a particular trade. Apprentice wages rise to about 90 percent of journey wages near program completion (GAO 2005).
- ¹⁸ Wisconsin has sought federal funds to develop the "Green Up Wisconsin" apprenticeship program to build a career pathway in the energy-efficiency sector from weatherization to a skilled trade, such as carpentry, HVAC technician, plumbing, or electrical work.
- ¹⁹ The U.S. Department of Labor has launched an investigation of Wisconsin Department of Workforce Development over allegations of lax oversight of registered apprenticeship programs for not meeting minority recruitment goals: <http://dailyreporter.com/blog/2009/11/16/feds-investigate-minority-apprentices>.
- ²⁰ States should follow the lead of Washington, which prepares an extensive report on apprenticeship participation and outcomes: www.wtb.wa.gov/Documents/WTR_Apprenticeship.pdf.
- ²¹ Information regarding Wisconsin's credit articulation and training wage policy is available at: www.dwd.state.wi.us/apprenticeship/pdf/wisconsin_apprenticeship_manual.pdf; New Jersey policy is available at: www.njplace.com.
- ²² Training and Employment Guidance Letter (TEGL) 02-07: <http://wdr.doleta.gov/directives/attach/TEGL/tegl2007/TEGL2-07.pdf>. A narrative format is available at: http://wdr.doleta.gov/directives/attach/booklet/tegl/2007/tegl_0207.pdf.
- ²³ Information about regional action clinics is available at: <http://21stcenturyapprenticeship.workforce3one.org/page/resources/1000908940741030192>.
- ²⁴ Maine Department of Labor (1992). "Apprenticeship rules: Rules relating to labor standards for registration of pre-apprenticeship programs." 26 MRSA §2006: www.maine.gov/sos/cec/rules/12/181/181c003.doc.
- Connecticut state regulation setting standards/registration process for youth pre-apprenticeship program. See Sec. 31-51d-2.(f) and Sec. 31-51d-3.(b): www.ctdol.state.ct.us/progsupt/appren/appregs.htm.

- ²⁵ Illinois Economic Opportunity Grant Program summary: www.commerce.state.il.us/dceo/Bureaus/Technology/Technology+Grants+Programs/Employment+Opportunities+Grant+Program.htm and guidelines: www.commerce.state.il.us/NR/rdonlyres/5178BE1C-F88D-4ADB-AC38-E066883B7B7C/O/FY07EOGPGuidelinesStatementofQualificationRFAFINALchng040408.pdf.
- ²⁶ The Ohio Department of Job and Family Services (2009). "Request for Proposals, Constructing Futures." RFP#: R-1011-15-8031: http://jfs.ohio.gov/rfp/R1011158031/ConstructingFuturesRFP9-1-09FINAL_WEB.pdf.
- ²⁷ Maryland Construction and Energy Technologies Consortium: www.mhec.state.md.us/pressroom/October2009/October2009WeatherizationEnergyEfficiencyTraining.asp.
- ²⁸ Washington I-BEST information: www.sbctc.ctc.edu/college/e_studentsuccessprograms.aspx.
- ²⁹ Washington I-BEST program examples: www.sbctc.ctc.edu/college/abepds/program_summaries_9.04.09_for_external_use.rtf.
- ³⁰ Washington Opportunity Grant information: www.sbctc.ctc.edu/college/s_opportunitygrants.aspx.
- ³¹ Washington Opportunity Grant program examples: www.sbctc.ctc.edu/college/studentsvcs/ogapprovedprograms-allcollegesgrid_20081015.pdf.
- ³² Washington Student Achievement Initiative information: http://168.156.9.142/college/e_studentachievement.aspx.
- ³³ Kentucky Remedial Bridge information: www.kctcs.edu/System_Initiativies/Career_Pathways.aspx.
- ³⁴ Wisconsin RISE information: www.risepartnership.org/default.htm.
- ³⁵ Unions typically set apprentice-to-journey ratios for projects on which they work.
- ³⁶ Public Law 109-59, Section 1920, Transportation and Local Workforce Investment: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_public_laws&docid=f:publ059.109.pdf.
- ³⁷ At the federal level, Executive Order 11246 established race- and gender-based goals for affirmative action hiring on federally-funded projects: www.dol.gov/esa/ofccp/regs/compliance/fs11246.htm. New Jersey has established a set of county-based minority and female hiring goals for transportation projects: www.state.nj.us/transportation/eng/specs/SP/doc/EEOSpecialProvisionsState.rtf. Ohio has set a range of minority hiring goals by skilled trade and metropolitan area and an universal hiring goal for women, in affect for a broad range of state-funded public works projects: www.odod.state.oh.us/cleanohio/GreenSpaceConservation/Documents/EEOPACK.pdf.
- ³⁸ Connecticut statutory language authorizing the Capital City Economic Development Authority to establish policies on state-funded projects for local hiring efforts. See Sec. 32-602. Purpose. Powers. (8)(A)-(C): www.cga.ct.gov/2009/pub/chap588x.htm.
- ³⁹ Sample development agreement language describing contractor and employee set asides and preferences: www.workingpoorfamilies.org/pdfs/FOIA_09-02_Employment_Preferences.pdf.
- ⁴⁰ U.S. DOT policy on local hiring preferences: www.fhwa.dot.gov/programadmin/contracts/042094.cfm.
- ⁴¹ For more information of Section 3, go to: www.hud.gov/offices/fheo/section3/section3.cfm.
- ⁴² Missouri Housing Development Commission guidance to contractors: www.mhdc.com/rental_production/section3.
- ⁴³ List of prevailing wages by state and occupation: www.gpo.gov/davisbacon/allstates.html.
- ⁴⁴ Ohio Public-Private Partnership Prevailing Wage Guidelines: www.com.ohio.gov/laws/docs/laws_PartnershipGuidelines.pdf.
- ⁴⁵ For a listing of proposed and enacted state and local ordinances establishing responsible bidder and/or prequalification requirements: www.faircontracting.org/pdf/f.php.
- ⁴⁶ President Obama Executive Order permitting use of project labor agreements: www.whitehouse.gov/the_press_office/ExecutiveOrderUseofProjectLaborAgreementsforFederalConstructionProjects.
- ⁴⁷ Illinois Executive Order permitting use of PLAs: www.faircontracting.org/NAFCnewsite/pla_pdf/Illinois-Executive-Order-on-PLAs-2003.pdf.
- ⁴⁸ New York Executive Order permitting use of PLAs (see page 10): www.faircontracting.org/NAFCnewsite/pla_pdf/PLAs-in-NY-State.pdf.
- ⁴⁹ New Jersey law permitting use of PLAs: www.njleg.state.nj.us/2002/Bills/PL02/44_.PDF.
- ⁵⁰ New Jersey 2005 annual report on use of PLAs: www.njstatelib.org/digit/901/p962/project_labor_agreement_2005.pdf.

The Working Poor Families Project partners with nonprofit organization in 24 states and the District of Columbia:

Alabama: Arise Citizen's Policy Project
Arkansas: Southern Good Faith Fund
California: California Edge Campaign
Colorado: The Bell Policy Center
Connecticut: Connecticut Association for Human Services
District of Columbia: DC Appleseed Center for Law and Justice
Georgia: Georgia Budget and Policy Institute
Illinois: Chicago Jobs Council
Kentucky: Mountain Association for Community Economic Development
Maine: Maine Center for Economic Policy
Maryland: Jobs Opportunities Task Force
Massachusetts: The Crittenton Women's Union
Michigan: Michigan League for Human Services
Mississippi: Mississippi Economic Policy Center
Nebraska: Nebraska Appleseed
New Jersey: Center for Women and Work, Rutgers University
New Mexico: New Mexico Voices for Children
New York: Schuyler Center for Analysis and Advocacy + Center for an Urban Future
North Carolina: North Carolina Budget & Tax Center
Ohio: Community Research Partners
Pennsylvania: PathWays PA
Texas: Center for Public Policy Priorities
Utah: Voices for Utah Children
Washington: Statewide Poverty Action Network
Wisconsin: Center on Wisconsin Strategy

Project management is provided by Brandon Roberts + Associates (www.brandonrobertsassociates.com), a public policy consultancy in the Washington, D.C. area.

To learn more about the Working Poor Families Project, visit www.workingpoorfamilies.org.



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